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PC GAMER PRESENTS

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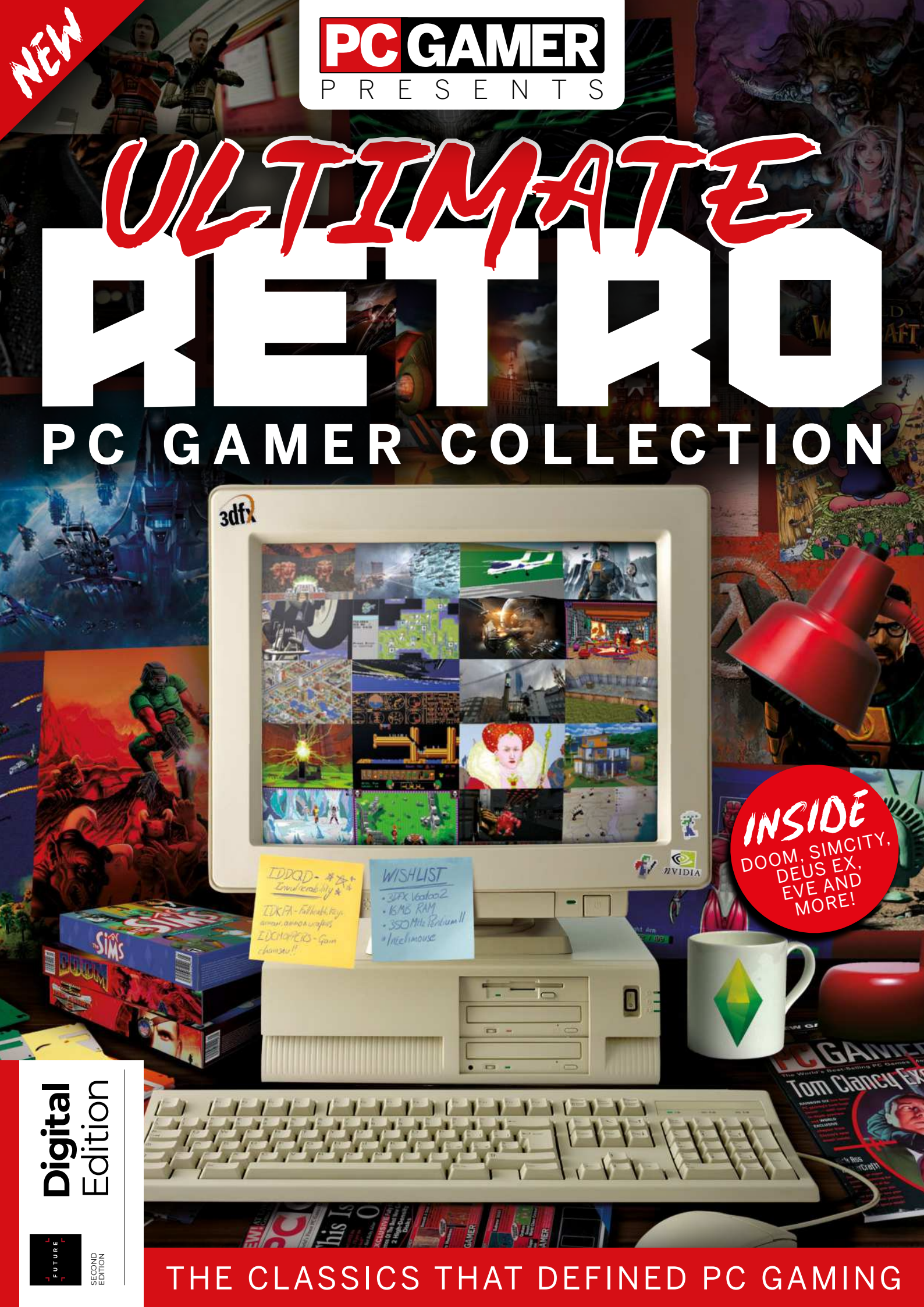
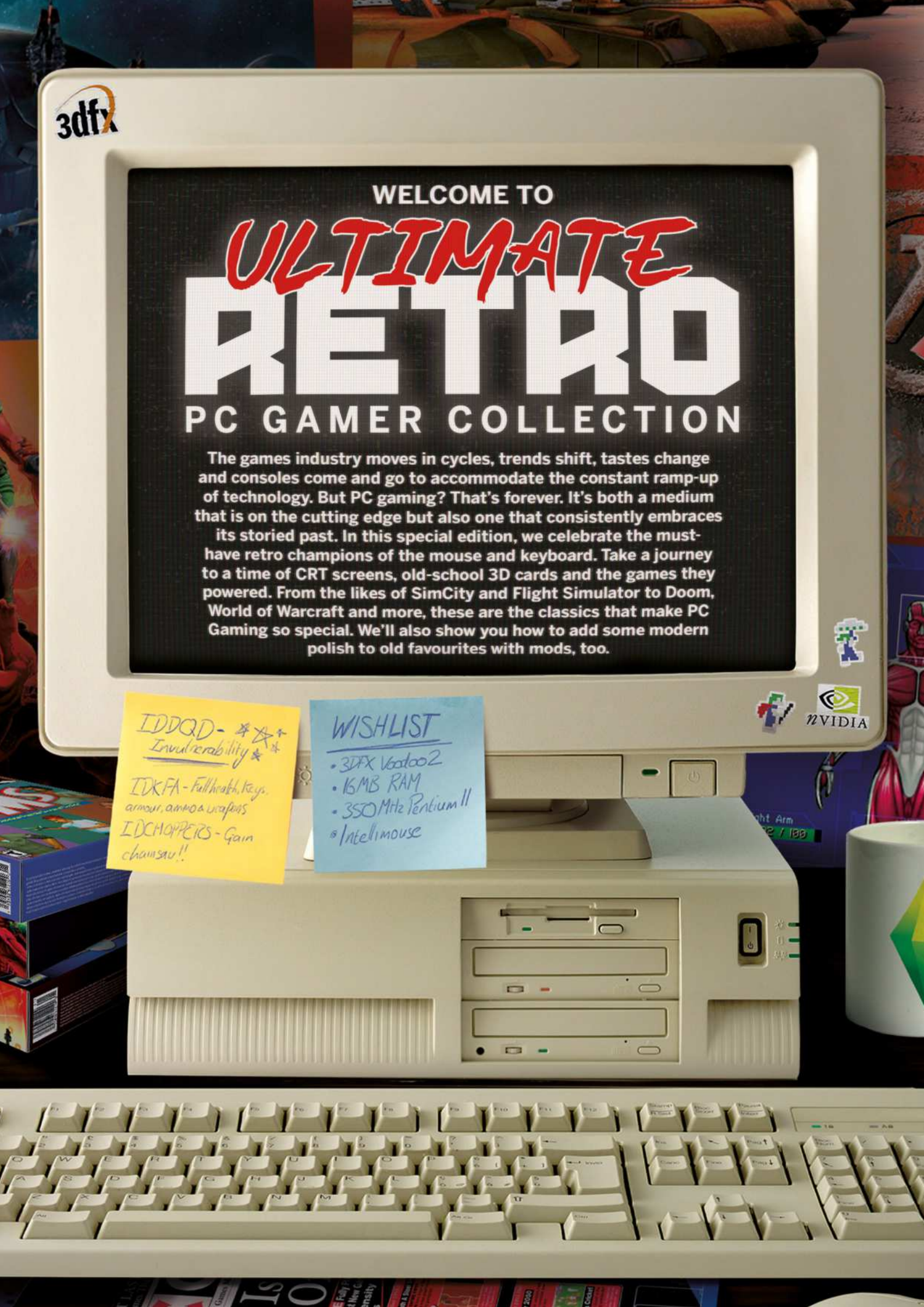


Digital Edition

FUTURE

SECOND EDITION

THE CLASSICS THAT DEFINED PC GAMING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WELCOME TO
ULTIMATE
RETRO
PC GAMER COLLECTION
The games industry moves in cycles, trends shift, tastes change and consoles come and go to accommodate the constant ramp-up of technology. But PC gaming? That's forever. It's both a medium that is on the cutting edge but also one that consistently embraces its storied past. In this special edition, we celebrate the must-have retro champions of the mouse and keyboard. Take a journey to a time of CRT screens, old-school 3D cards and the games they powered. From the likes of SimCity and Flight Simulator to Doom, World of Warcraft and more, these are the classics that make PC Gaming so special. We'll also show you how to add some modern polish to old favourites with mods, too.
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IDKFA - Full health, keys, armour, ammo & weapons
IDCHOPPERS - Gain chainsaw!!
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FUTURE

ULTIMATE RETRO
PC GAMER COLLECTION

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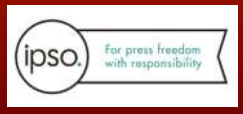

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HIZEN
BUZEN
BUNGO
HIGO
HYUGA

84

8

60

Doom

A HISTORY OF VIOLENCE

The story of **DOOM** and how it changed everything – as told by co-creator John Romero.

By Andy Kelly

Doom

In the winter of 1993, Dallas, Texas-based developer id Software released a game about a space marine killing demons, and a legend was born. *Doom* set the standard for the first-person shooter on PC and beyond, and was one of the first videogames to bleed into mainstream pop culture. It was critically acclaimed, technically groundbreaking, a sales success, and is still considered by a huge number of people to be one of the best games of all time.

Today, co-creator John Romero runs his own studio in Galway, Ireland. His most recent game is *Empire of Sin*, a turn-based strategy game set in Prohibition-era America. This is a far cry from *Doom*, but the landmark shooter is never far from his mind. In 2018, Romero released *SIGIL*, a brand-new *Doom* episode. And his Twitter feed is a goldmine of anecdotes, rare photos and other *Doom* ephemera. But why, when so many other games from the '90s have been forgotten, does *Doom* endure?

"It's programmed really well," says Romero, speaking from his studio in Galway. "And releasing the source code has allowed ports to keep it at a highly playable level. If you play it in DOSBox, it still feels pretty good. But it's not as smooth as it is on today's machines. I actually think it feels better playing it with a source port nowadays. There was a tipping point a while ago where people would swear you had to play the original DOS version, but now these source ports make it feel really good."

RIGHT: Romero, who has been making games since the late 1970s, hand-coded much of what makes *Doom* special.

FAR RIGHT: *Doom*'s weapons still feel great, a result of months of fine-tuning in the early stages of the game's development.

SPECIAL EDITION

Another important part of *Doom*'s magic, and the reason it still feels good to play today, is how brilliantly crunchy its weapons feel to fire. "We had a limited amount of experience putting guns in a shooter when we made *Wolfenstein*. But with *Doom*, we spent a year with those weapons. We had a lot more of them, and they were not all the same kinda thing. We had energy weapons, rockets. So we spent a lot more time focused on balancing, and the speed of weapons in relation to the player's speed, and everything else."

Doom's fast-paced, brutal combat made it a smash hit, but Romero and the rest of the id Software team knew long before release that they were onto something special. "We knew that before we made the game," says Romero. "We planned *Doom* for a couple of months before we started working on it. It's kinda unbelievable, but we even put out a press release saying it was going to be the best game in the world."

This press release, sent to the games media in 1993, says *Doom* will feature revolutionary programming, advanced design and faster texture-mapping than any other game – some incredibly bold claims that all turned out to be true. "It was just crazy, especially as we had just started making the game," says Romero. "But we knew, even then, that what we were going to put in the game was going to be better than anything that anyone was making at the time. So we said that. But we've never said anything like that again."

Doom is often thought of as an overnight success, but before id Software released it, the studio had already developed dozens of

MARS ATTACKS *The mainline* Doom *series so far*

DOOM
1993
The game that started it all, elevating 3D first-person shooters way beyond anything that had been released before. And it's still really fun to play today.

DOOM II: HELL ON EARTH
1994
A sequel that was largely more of the same, but with bigger, more intricate levels. There was also double the number of demons to slaughter.

DOOM 3
2004
The third *Doom*, which John Romero was not involved in, had an increased focus on horror and atmosphere. It's the least *Doom*-like of the main releases, but an interesting take on the series.

DOOM
2016
In what may be one of the greatest reboots of all time, Bethesda and id Software brought *Doom* bang up-to-date in a wildly entertaining way with the simply titled *Doom*.

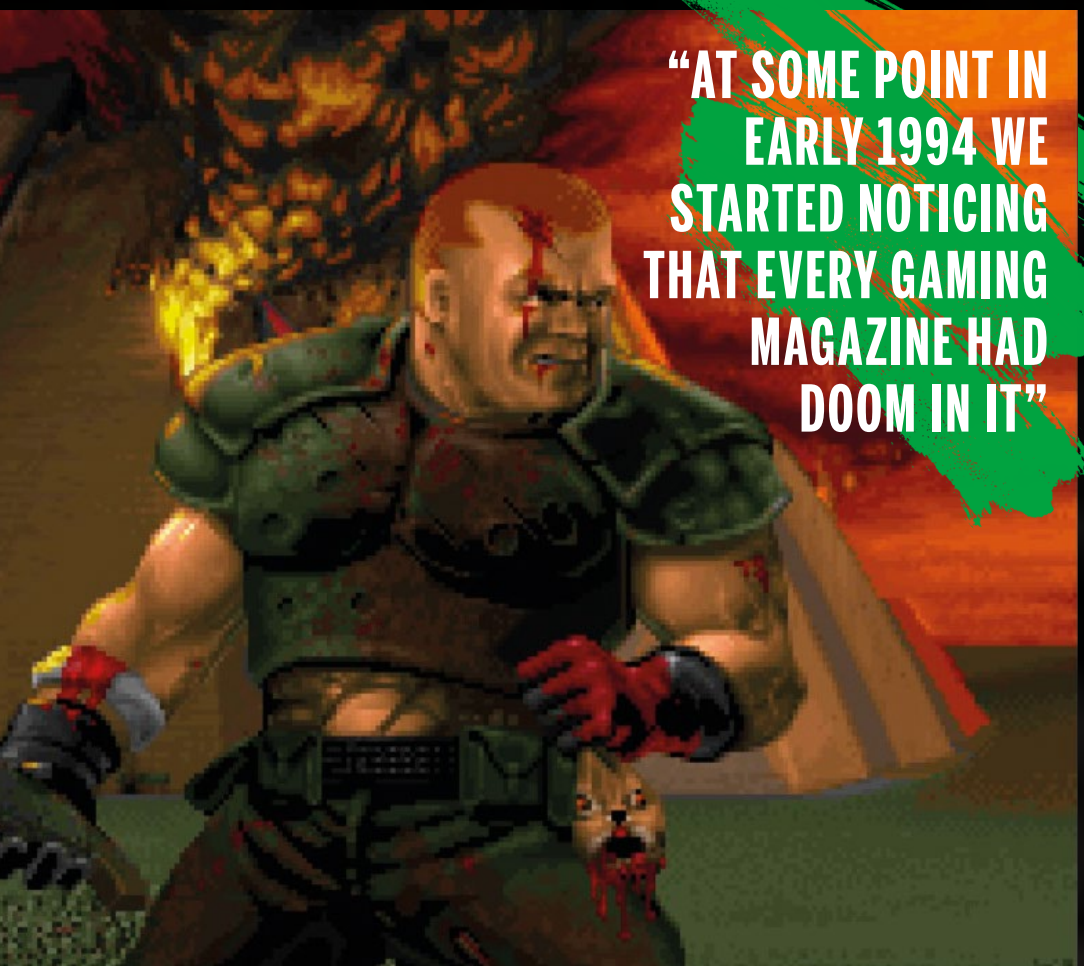
DOOM ETERNAL
2020
And they did it again with *Doom Eternal*, which doesn't just turn the *Doom* formula up to 11, but rips the knob off the speaker and then theatrically boots the speaker into a demon's face.

games – including several relatively primitive first-person shooters. "Before we started making it, it was our fifth first-person shooter," says Romero. "We were a small company, but *Doom* was game 20-something.

"We'd made a ton of games before *Doom*, and that was only in a few years. We got together in 1990, but I'd been making games since at least 1979. I had dozens of games already made. When we got together, we spent years making a lot of games together before we even started work on the *Doom* project. So we had a lot of practice both separately *and* together."

It wasn't long until word about *Doom* began to spread like wildfire, and people were somehow getting a hold of id's office number and asking when the game would be released. "I have no idea how that happened," says Romero. "People had heard about it on the internet and were going crazy waiting for it to be released. That was really cool.

"I remember the January or February issue of Computer Gaming World, which was the big magazine back then, and they had a section at the very back with new releases. They would write a couple of quick paragraphs with a screenshot. And *Doom* was just in there, and it said, 'You're a space marine and you're killing aliens in a base.' And that was it!"



"AT SOME POINT IN EARLY 1994 WE STARTED NOTICING THAT EVERY GAMING MAGAZINE HAD DOOM IN IT"

DEMON DAYS

But despite an initially lukewarm response from the media, id Software knew from the number of orders it was receiving that *Doom* was going to be a success. "Back then Usenet was a thing, and there was a weekly top 100 games list," Romero continues. "*Doom* came out and it got to the top pretty quickly, and it just stayed there. Then, at some point in early 1994 we started noticing that every gaming magazine had *Doom* in it, in one way or another."

Romero remembers an article in PC Gamer where writer Matt Firme talked about how *Doom* had taken over his life. "*Doom* has forever redefined our expectations of PC gaming," the article read. "If any new game hopes to win the title Game of the Year, it'll have to beat *Doom* first." Romero also has fond memories and high praise of a *Doom II* article we published in 1994. "It had the coolest two-page spread with the title 'UNSPEAKABLE', with the Icon of Sin, and I loved that. That's my favourite article on *Doom* ever."

BLOOD SIMPLE

Doom's 'controversial' violence was another string to its bow, with tabloid hand-wringing only adding to the game's popularity. The more people who said kids shouldn't play it, the more kids played it. Taking advantage of this controversy, publisher GT Interactive had some, uh, interesting marketing ideas. "They sent packages of guts to reviewers," says Romero. "And they'd have to dig through it to get the floppy disk."

For Romero, this sudden surge in popularity was exciting, but not completely new. "The whole ride was pretty natural," he says. "During the 1980s I had seen personal success in programming that no one else knew about, except maybe my parents. But I was learning stuff, making games, selling games. They were going into stores and I was getting covers of magazines. I was doing all of this stuff while I was in high school."

Romero had even worked for the US Air Force. "I knew how to code so they had me in a vault programming top secret stuff. Because I was working hard on programming, a lot of cool stuff happened. Then I got my first job at Origin Systems, which to me was the ultimate. I was like 'I'm done. I'm now working at the best company I ever wanted to work at.'"

Romero and id Software had also had some interest from the press before, with earlier games like *Commander Keen* and *Wolfenstein*. "There were a lot of amazing reviews in magazines and on the internet about how *Commander Keen* was changing the PC, making it a

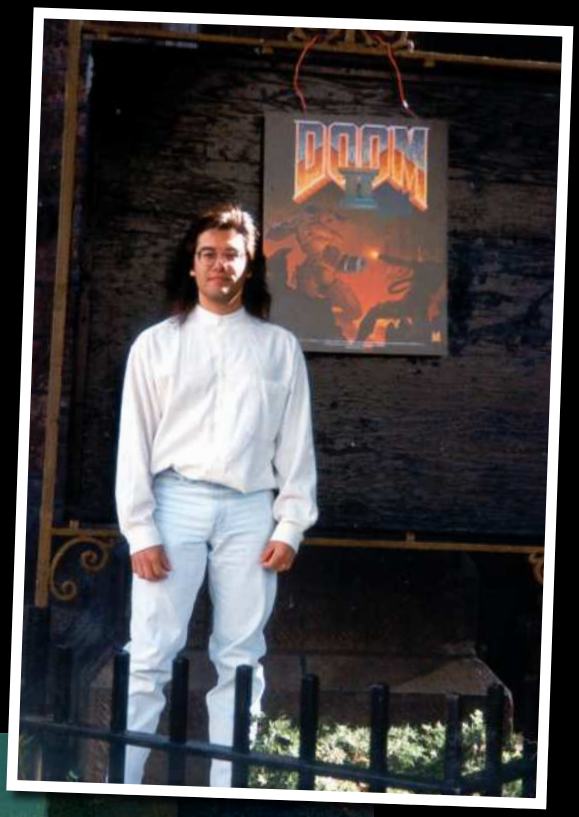
ABOVE: An early example of *Doom's* multistory level architecture, which was unprecedented at the time.

RIGHT: Artwork like this helped sell the idea of *Doom*, and has since become synonymous with the series as a whole.

"THEY SENT PACKAGES OF GUTS TO REVIEWERS. AND THEY'D HAVE TO DIG THROUGH IT TO GET THE FLOPPY DISK"

Nintendo contender. Then with *Wolfenstein*, we got our first radio interview and TV stations came over to do stories. We went to Disney World and people recognised us. So it was like, 'Wow, OK, this is the beginning of something. We're doing some cool stuff.' And then *Doom* was the next level, basically."

Doom was created in a time when 3D games were still fairly basic, but for Romero and the others on the team, the hardware limitations of the day were something to be conquered and not to be beaten by. "We were trying to break away from those constraints, and that's why *Doom* was better than other games," he says. "640k was the memory limitation for most games back then, but *Doom* was the first we made that went over the 1MB boundary."



OS AND THEM

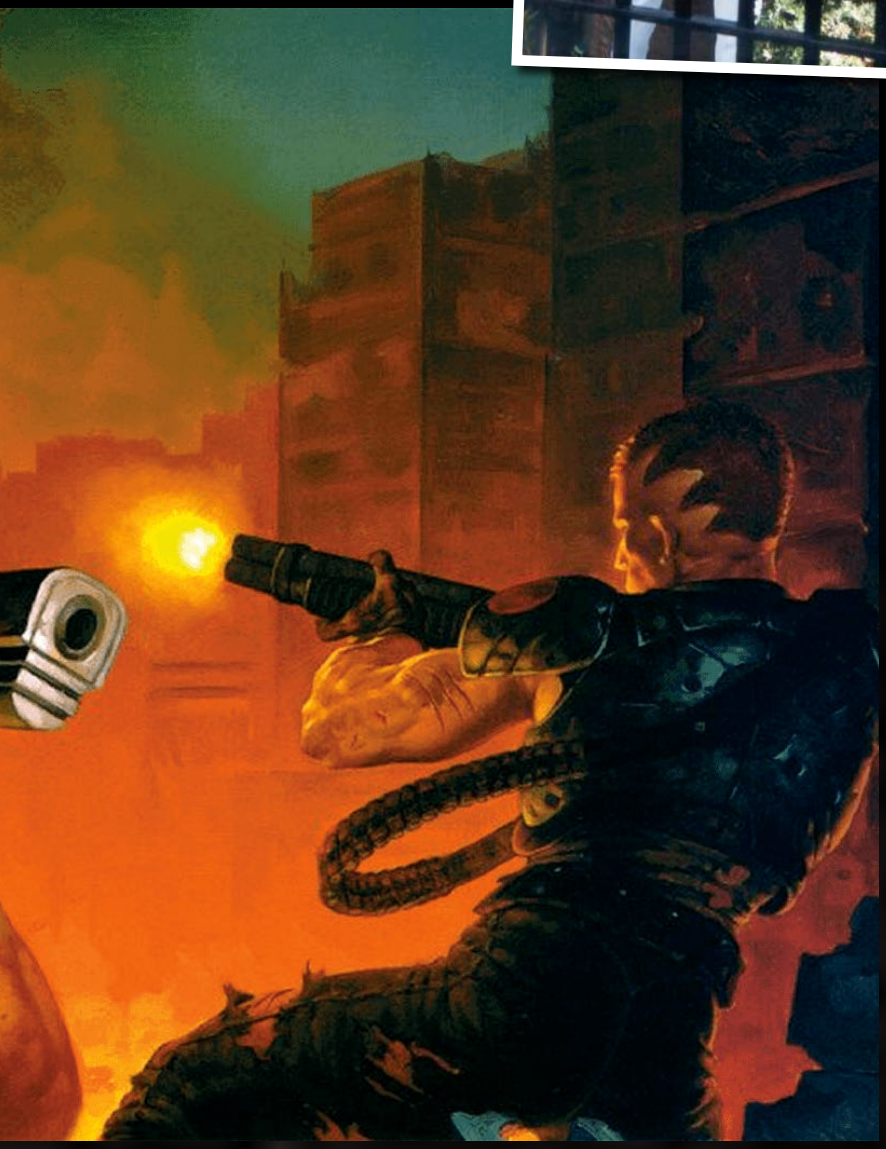
Doom's technical advances were also made possible by the switch from DOS computers to advanced NeXTSTEP workstations. "We developed *Doom* on a superior operating system, which allowed us to do more," says Romero. "We developed it on a NeXTSTEP system, which is today's OSX.

"We actually started using this OS back in 1992 during the development of *Wolfenstein*, but to lay out books and stuff like that. Then when we started working on *Doom* we got NeXTSTEP workstations for everyone and it was like night and day. It felt like DOS machines were little toy computers in comparison. They had 1024x768 16-bit graphics. The programming toolkit was unbelievable. So we had worked hard to break out of the box that DOS game developers were normally restricted to."

Doom's complex, abstract, secret-filled level designs are often held up as an example of how modern games have dumbed down. I ask Romero why he thinks this kind of design has fallen out of favour. "Most first-person shooters try to replicate the real world now, and that was kinda where graphics were going the entire time since *Doom*," he says. "People were even modding *Doom* to try and make it look more realistic.

"*Marine Doom* was used by the military to get soldiers used to fast reflexes and reactions. That was replacing the graphics with scanned-in normal humans instead of pixel art monsters. The trajectory of graphics has always been realism, so why wouldn't you make the environments realistic too? And the artistic design of abstract levels is contrary to that.

"*Doom*'s puzzles made sense in that kind of space, but that's harder



ABOVE: All white, a bold fashion choice even for the time. You just can't get blood stains out of material like that.

CONSOLE COMMAND *Romero on Doom 64, which you can now play on PC*

"I thought it was great. We allowed Midway to do whatever they wanted to do with *Doom*. They were a real game dev company who had been around for decades. Smart people, great programmers. We could trust that they would do a good job with *Doom*. When they made PlayStation *Doom* they did an incredible job, but with *Doom 64* we said they should do something different than just replicating the original game. Aaron Seeler, who programmed *Doom 64*, came to Texas and he had an office on our floor so he could pick John Carmack's brain at any time for tips on how to get the Nintendo 64's chip to run fast. The lighting was great, they were making great levels, and we were very happy with *Doom 64*. And that's why it's being re-released. It was a fantastic version."

to do in a realistic setting. However, I think *Half-Life 2* did an amazing job of putting really interesting puzzles in an FPS through physics and stuff. They did a great job of moving the design language forward."

LEVEL UP

But creating these levels was hard work – doubly so because no one had made game worlds with this level of intricacy before, especially in three dimensions. "One of the biggest hurdles in developing *Doom* was the environments," says Romero. "Just before *Wolfenstein* we made *Catacomb 3D* and that was our first texture-mapped 3D game. Those environments were like dungeons. Just running through tunnels killing stuff. *Wolfenstein* had VGA graphics and it looked better, but it was still a maze game. And before *Doom*, every three-dimensional game was basically a maze game. Going back to 1974, everything that was 3D was a maze. If you played *Ultima*, *Wizardry*, or *Might & Magic*, or any game that had a 3D environment in it, you were always in a 90-degree walled maze.

"So we didn't have any example of how to do something different, and it was a lot of work trying to break out of that. Even the early *Doom* levels we made as examples when I was programming the *Doom* editor were still very *Wolfenstein*-looking, and they weren't fun to play in. They were basically boring. So I decided one day to solve the problem."

Romero spent a few hours experimenting and came up with a

PORT OF CALL

The weirdest things* Doom's *been ported to

PIANO

OSCILLOSCOPE

PRINTER

CALCULATOR

ATM

DIGI CAMERA

SMARTWATCH

iPOD

TREADMILL

"THE ACTUAL LAYOUT AND ARCHITECTURE OF THE LEVELS NEEDED TO BE FUN TO PLAY IN"

LEFT: The original chainsaw sprite was based on a photograph of a McCulloch Eager Beaver, a real-life chainsaw.

ABOVE: *Doom II* introduced a number of monstrous new demons, including the iconic (literally) Icon of Sin.

RIGHT: id Software is a classic example of a small, talented group of dedicated people changing the face of an entire industry.

few sample environments that were far more interesting than the samey mazes of *Wolfenstein*. "The other guys saw it and they were like, 'Wow, this is it. This is the style we need to go for.' And so we went full-on abstract, not worrying about making things look realistic.

"We could make objects in the world look realistic, like crates and stuff, but the actual layout and architecture of the levels needed to be fun to play in, look cool, and not adhere to any kind of realism. They just needed to be really fun, and that was the beginning of *Doom*'s abstract style of level design, which basically all '90s games went on to use.

"Darkness was a really big factor in making the game feel suspenseful and tense," explains Romero. "In E1M3 when you go to get the keycard, it's the first time that the lights are turned out on you. People never forget the first time they saw that. You grab the blue keycard, the lights go out, and you just hear hissing. You turn and you see the silhouettes of about five Imps coming at you in a dark room and you have to find the way out."

CRACKING THE CODE

But *Doom*'s engine unfortunately had no built-in support for doing tricks like this. If Romero had an idea for something cool, he couldn't just quickly rig it up – he had to go in and code it himself. "When you see lights flickering, doors opening, lifts going up and down, taking damage from slime... any gameplay thing happening in a level, I did all the programming for it, which came from what I felt like I needed to have in the game at that time.

"So if I'm like, 'I need to have the floor rise out of the slime, and I need the floor to turn into a normal floor when it rises. What are the rules for that happening?' Then I had to go into the editor and code that trigger and what that trigger does. Then I needed to go into the game code and program it so it would actually do that. Then I had to go back into the editor and put it into the level to see if it would work the way that it should. And I had to do that with every single special thing in the game.

"*Doom* was designed as we were making it. There wasn't a big list of all the things we needed. It was like, 'I'm making a level and it would be cool to have a flickering light here,' and that's it. Start programming it. And everyone who has been making *Doom* levels since has been using stuff I came up with in five minutes for that one thing. These features didn't take long to implement, really, but they've lasted for decades."

And that's the core of what makes *Doom* a genuine masterpiece. It was created by a group of supremely talented, passionate people who were obsessively pushing the technology of the time to its limits – and doing so because they wanted to make something great. Everything else aside, it's just a really well-made game, and will likely endure for another three decades.

As for John Romero, he's still a part of the games industry, still making games, and still keeping *Doom* alive with projects like his *SIGIL* expansion. A lot of games burn bright then quickly fade away, but *Doom* is eternal. ■

RPG
QUEST

IT'S ONE THING TO ATTEMPT TO SET OUT TO PLAY EVERY SINGLE GAME IN AN ENTIRE GENRE.

BUT TO FINISH EACH ONE IN THE ORDER THEY WERE RELEASED AND THEN TO BLOG DETAILED ACCOUNTS OF THEM IS A QUEST BEYOND.

THAT'S WHAT CHESTER BOLINGBROKE, AUTHOR OF **CRPG ADDICT**, SET OUT TO DO IN FEBRUARY 15, 2010, WHEN HE WROTE THE BLOG'S FIRST POST.

OVER A DECADE LATER, HE'S STILL GOING.

By Alex Wiltshire

So far, Chester has ventured through the very first mainframe-based computer role-playing games, charted the rise of *Ultima*, and battled through generations of computers. He's faced adversity, balancing the thousands of hours his adventure demands against the needs of his personal life. He's worked on it from his home in Maine, grappling with emulators and translations, and from hotels across the US while travelling for his job. He gave up on the whole endeavour once. But he's just as active now as he was when he started, and that's despite knowing that the whole thing is impossible.

It's already taken him over two years to play through the games of 1992, from *Wizardry: Crusaders of the Dark Savant* ("has a way of feeding the player overwrought prose") to *Ultima Underworld: The Stygian Abyss* ("groundbreaking, innovative, well-produced, addictive, enormously fun to play – and at the same time a bit disappointing in what they did and didn't do with the story"). And also the games you won't remember, from *Bandor: The Search for the Storm Giant King* ("I binged a decent chunk of TV series episodes while playing the game because I needed some other source of entertainment") to *Ultizurk II: The Shadow Master* ("extremely basic").

Chester Bolingbroke isn't the author of CRPG Addict's real name, since he prefers to stay anonymous. "I'm mostly concerned that if anyone in my work life finds out about the blog and I'm late with some project and they go on my timeline and see that I've post a couple of entries on games." But he goes by Chet on the blog, which is his real-life nickname too, so that's what we'll call him. Anyway, as he forges ahead, Chet knows the number of games released per year will only increase. "If I don't start rejecting more games or finding other ways to change how I approach the chronology, I'll die before I get out of the 1990s," he says.

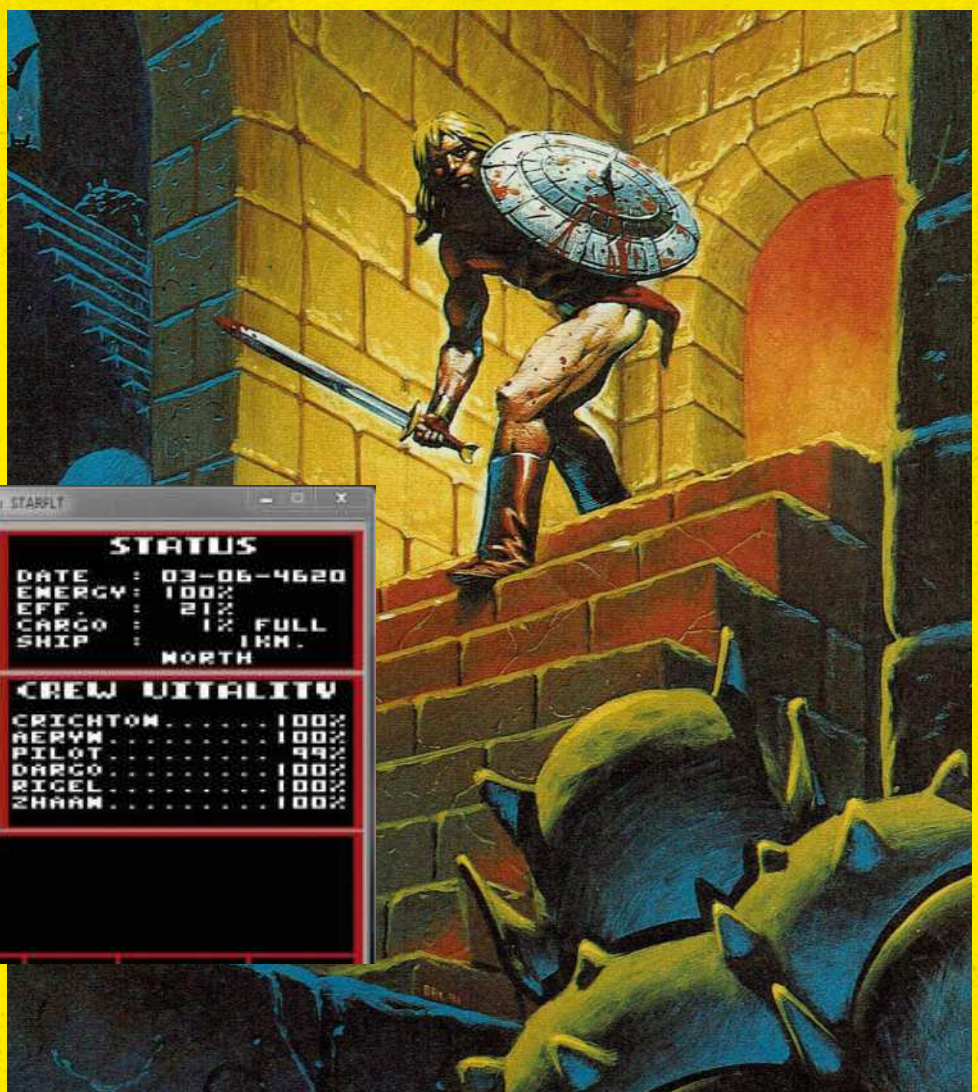
HISTORY LESSON

Still, he probably knows more about the first 15 years of the CRPG than anyone alive, not that he takes an academic line on the genre. While he works into his posts a good sense of the context of these games – where they came from and where they've gone next – Chet writes about them very much from a personal perspective, founded on what he values in his favourite genre, a love which began way back in 1984 or so, when he was 11 or 12 and played an RPG called *Questron* on his friend's Commodore 64.

"IT JUST BOWLED ME OVER, THE IDEA OF THE PERSISTENCY OF THE GAME"

"It just bowled me over, the idea of the persistency of the game. The character isn't just alive long enough to fight a few times and then you had to insert a new quarter, you had a persistent character who you could save and it had this epic quest that would take multiple hours over several days of playing, and I ended up taking over his computer and playing for the rest of the day. I think he got mad at me at one point. It became part of my life from that moment on."

That love led Chet to put together a working definition for what makes for a CRPG. It has to have character development, allowing them to get more powerful over the course of a game. Characters' stats should affect



BOTTOM LEFT: Sci-fi RPG *Starflight* (1986) is celebrated for its open-ended exploration and naturalistic NPC behaviour.

how well they fight, as opposed to pure player skill. And there has to be an inventory which allows you to choose items to use, wear and wield. Along with the cardinal rule of no console games (which he broke when he played *Final Fantasy*), these rules determine the list of games Chet has set for himself to play. "I haven't otherwise fully played an RPG on my computer in over ten years that I didn't play as part of my blog."

On top of these core characteristics, Chet has also developed a keen sense for what he values in CRPGs, namely a balance of a wide world, a sense that your characters are a part of that world, and a richness to the things that you do and what happens in that world. He likes descriptions of weapons in your inventory and good NPC conversations, however he says he could do without voiced dialogue. All these factors, which aren't exactly controversial, come together in a rating system which Chet set up a couple of months after starting CRPG Addict, which kind of is. Named GIMLET after his favourite cocktail (and charmingly awkwardly made to stand for Game Innovation, Merriment, Likability, and Engagement Test), it features ten characteristics, which rate things like game world (lore, whether it reflects your actions), economy (whether there's good stuff to buy), gameplay (difficulty, linearity, pacing), and each contributes up to ten points to an overall 100-point scale.

ABOVE: *Ultima Underworld* looks extra groundbreaking in the context of the games released around it.

BELOW: Gold Box's *Pool of Radiance* (1988) is one of CRPG Addict's highest-rated games.

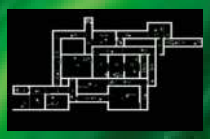
TEXT ADVENTURERS

Shut it, Zuckerberg – blogs aren't dead yet

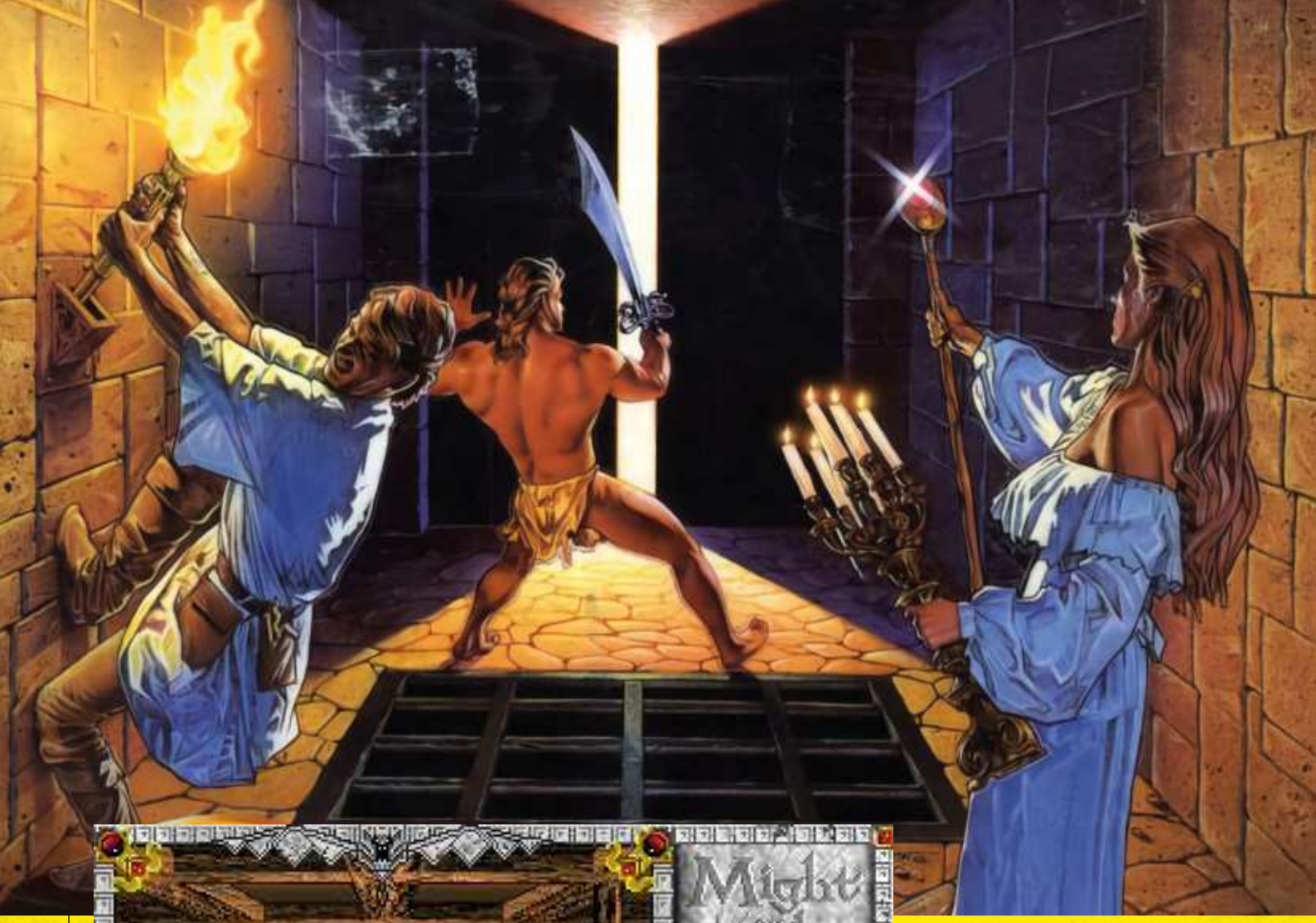
Chet isn't the only in-depth game history blogger around. There are others who match his ambition and commitment, and who have adopted his template to cover some of the other genres out there.

DIGITAL-ANTIQUARIAN
filfre.net
Jimmy Maher's exhaustive history series tells the surprising and often dramatic stories behind some of the most legendary gaming series.

THE ADVENTURE GAMER
advgamer.blogspot.com
Founded in 2011 with the idea of doing CRPG Addict for adventure games, but now it is written by a group of contributors.



DATA-DRIVEN GAMER
datadrivengamer.blogspot.com
Just started in 2018, writer Ahab traces the ancestry of leading games and then plays each one in order.



ABOVE: *Might and Magic III* (1991) took Chet 68 hours to complete, covered across ten posts.

"It was my attempt to quantify what I enjoy about games and give them a relative ranking," says Chet on the GIMLET scoring system. "But it causes more strife than it should. People look at something quantitative and think it's supposed to be objective, so they start arguing about scores. I'm considering throwing the whole thing away because it creates all kinds of tension when I don't intend it. I just want to be able to quickly sort my list and say, all right, which games have the best story, or the best approach to character development? Maybe I should leave the individual scores and take out the total? I don't know."

HIGH SCORE

Still, GIMLET makes for some fascinating discussion of games, such as in his summing up of *Ultima VII: The Black Gate*, which we all understand as a milestone in CRPG design with its dynamic time-of-day NPC interactions and deep detail. GIMLET rated it 51 out of 100. "I want to thank those of you who are departing my blog at this point; it's been nice having you as readers," Chet wrote.

You may have forgotten *Ultima VII*'s terribly chaotic combat, the weird scale of its world, the lack of choice, the infinitely respawning enemies – "*Ultima VII* is a perfect example of a game that perhaps adding up its various parts doesn't create a score that's representative of the quality of the game," says Chet, who loved the game, just as he loves *Ultima* as a whole. (*Ultima VI* holds the highest GIMLET rank for gameplay and graphics, sound, interface, while *Ultima V* holds the highest for NPCs and economy.)

This isn't to suggest that CRPG Addict is a hotbed of score arguments and ire. Quite the reverse; its comments and community are great. "If you just read my entries and not the comments, you're only getting half the blog, because a lot of stuff gets filled in," says Chet. "There's quality material there." In fact, one of the most charming things about CRPG Addict is that it has the air of the fabled old web, when we'd surf niche interest sites and get to know like-minded nerds. "I feel like I've been lucky since the beginning," says Chet. "I think it helped that I came up with the idea from posting on Reddit about having won *Rogue*, and someone suggested I started a blog covering my experiences, and that day I started, and I got some of those readers immediately."

BLOG JAM

Chet had immediately seen the blog as an outlet for the hours he was

"THERE'S NO QUESTION THAT I SPEND MORE TIME ON IT THAN I SHOULD"

already spending playing games. "I was very concerned about how much time I spent on gaming. Trying to give it up probably wasn't going to work for me, so I tried to legitimise it by turning it into a project, something I could make a list, make notes, and have some tangible outcome. I'm not just burning four hours, I have a result that people read, and now they contribute money to me through Patreon, which helps me feel even better about the whole thing."

Still, in 2012 he gave up on the project. He was incredibly stressed out with work. "I was probably chronically late on two or three things and I think I was on a bit of a low point in terms of the games I was playing. Nothing was really gripping me; the blog began to feel more like work than my real work, which I needed to prioritise." But he's now slightly embarrassed by the whole episode, because after taking a holiday he found himself wanting to return, realising he just needed a break. "I wouldn't say it's healthy, though. I've always said that calling it the CRPG Addict wasn't entirely a joke, and there's a dark side to it. There's no question that I spend more time on it than I should."

Regardless, as he settles into what he calls 'quasi-retirement' – now teaching at a university and living in a quiet Maine town with a view of a harbour – Chet can only see himself putting more time into the project. But he's well aware that his completionist attitude can't persist as he plays on – the annual releases keep swelling and the genre keeps evolving. He bemusedly observes that *Assassin's Creed* games fit his definition of a CRPG. So he's not yet sure how, but he'll need to tighten his terms, or jettison a whole category, such as shareware games. "There's always going to be more games to cover than I have time, so literally this project will end with my death. Or, the end of blogging, I suppose, if I seem to be shouting at the air and no one's listening any more." ■

BOTTOM RIGHT: *Ultima VI* is one of Chet's all-time favourites.

ENDING IT

Old games weren't too good at endings

Chet has finished more CRPGs than anyone in history, which gives him a unique view of the art of a good ending. Trouble is, he says that most games up to 1992 had no idea how to finish out an adventure.

ULTIMA V (1988)
"There's a note in *Ultima VI* about how the mother of one of the characters met the Avatar at the party at the end of *Ultima V*, but there's no party! You just got shoved through a moongate!"

STARFLIGHT (1986)
"Although maybe the literal ending isn't that memorable, the last few hours have some amazing plot development so it's part of one big ending sequence."

QUESTRON (1984)
"Charles Dougherty believed in rewarding the player for completing the game so it has this fairly drawn-out ending where there's trumpets and a procession and the character gets knighted."

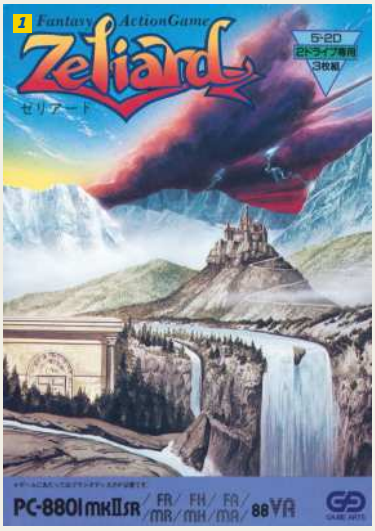
SAVED GAMES

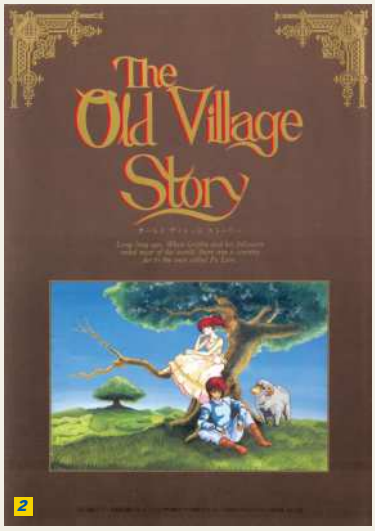
Japanese PC games of the '80s and '90s have a rich history, little-known in the west. **THE GAME PRESERVATION SOCIETY** is working to make sure they don't disappear forever.

By Wes Fenlon

The Game Preservation Society

It's late afternoon in Tokyo, and in the narrow three-storey home that serves as the headquarters of the Game Preservation Society, I've just learned about *Jesus*. In the west, when we talk about videogame developer Enix, we're probably talking about *Dragon Quest*, which inspired an explosion of console JRPGs in the '90s. Joseph Redon would much rather talk about a PC game like *Jesus*, which was made by Enix around the same time as the first *Dragon Quest*, back in 1987.

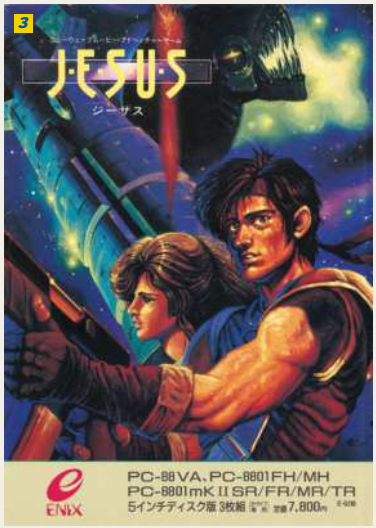




Like most of the thousands of games in Redon's collection, I've never heard of *Jesus* until he shows it to me. The mission of the Game Preservation Society, the nonprofit he co-founded, is to collect, archive, and protect Japan's PC games, most of them made in the '80s and '90s before consoles took over and doomed them to obscurity. Any game I point to he can tell a story about, casually dishing out some of the history of who made it and why it's special.

He loves every second of it. When he begins to talk about Enix, he slips into the role of a storyteller born into an oral tradition, passing down a lifetime of knowledge that could only be accumulated in Japan. Off the island, Japan's PC games are all but completely unknown. The Game Preservation Society exists to make sure they aren't forgotten.

"ENIX IS A VERY GREAT PUBLISHER, BUT THIS IS NOT THE HISTORY EVERYONE KNOWS"



1 Game Arts made its name with shoot 'em ups, but *Zeliard* was its first step towards being an RPG house.

2 A quaint adventure game from Enix, post-*Dragon Quest*.

3 I always knew Jesus would make it to space someday.

4 The Bible's not the only place where Jesus got a second round.

ENIX: THE PUBLISHING PIONEERS

"Enix is a very great publisher, but this is not the history everyone knows," Redon tells me as we flip through the covers of '80s RPGs and adventure games in a protective binder. Cover after cover is pure imagination fuel, evoking a breathless "I need to play this". In those days, great art and magazines were the best tools for selling games.

"When you sell 50,000 copies, you're rich," he says. That's how it was for PC developers in the mid-1980s – small teams or even individuals making games for an audience eager to use their shiny new computers, before Nintendo's Famicom took over.

Today, the common wisdom is that few Japanese gamers play on PCs. But you have to remember in the '80s, Japan was riding high on an economic boom. Japanese technology was the hottest shit on Earth, and personal computers – specifically the NEC PC-8801 released in 1981 – were selling gangbusters.

"Most houses were rich in the '80s in Japan, in the bubble," Redon says. "Buying new stuff every year. Let's buy a PC, a new car, a new TV." Enthusiast mags popped up for PCs and games, which were typically made in months on tiny budgets.

Enix started as a publisher, and decided to round up talent by offering a 1 million yen prize to hobbyist programmers who submitted quality games. Out of hundreds of entries Enix picked the best to release on the PC-88 and competing PCs, quickly gaining a reputation for quality. Enix's collective included the creators of *Dragon Quest*, which was a smash hit. *Dragon Quest 2* was even bigger, selling millions, when most successful PC games sold only tens of thousands of copies. And this is where Enix's PC history really gets interesting.

"Do you think they will invest time and money to make any more PC games that will sell only 10,000 copies?" Redon asks. "The games could even cost as much as a *Dragon Quest* [to make].

"Even more, because it's PC. No limits in memory – just increase the number of floppy disks. You have to make a gorgeous package. A 100-page manual. Advertise in many magazines. Why would you do it?"

Many other PC developers abandoned ship for the more lucrative Famicom. But Enix was different. "It's a publishing company, but it's a collective of game creators. They don't dream about Famicom. They dream about making games. They dream about high-quality graphics.

MEET THE VHD

The biggest damn floppy you ever did see

The VHD, or Video High Density, is actually a vinyl disc inside a plastic shell. It could hold an hour of video and was a competitor to the LaserDisc, read by a stylus instead of a laser. "There is only one big issue with the VHD. Like VHS, every time you watch it, the quality degrades. But when you have a brand-new VHD, you have the highest quality possible at that time," Redon says.

Dragon's Lair used a LaserDisc for its video, and in Japan some games used the VHD for the same thing. You'd need a VHD player for the MSX or Sharp X1 PC, but that disk only housed the video. The program would live on a tape that also came in the box, but some games housed their program within the VHD as noise, which would be read in the same way as a cassette.

About making digital music. About making always bigger games. Huge stories. They make entertainment, not money. So they tell Enix, 'We want to make games for the PC. This is the platform we think is the best for making the games we want to make.'

"And some developers, some publishing company investors, say no, it takes too much time. But Enix says, 'Okay, do it. Even if we don't make a lot of money, OK. From the beginning we're here to follow the creators, help them to market their dreams.'"

Maybe that's a romanticised history. But Enix did keep releasing PC games through 1993, including one Redon highlights, *Misty Blue*, in 1990, and the wonderfully named *Jesus II* in 1991. I've tried to imagine how my child self would've reacted to a Japanese game called *Jesus II* on a shelf, but the boldness and mystery of it probably would have shattered my mind.

The Game Preservation Society

Jesus, you may be surprised to learn, is an orbital space laboratory where the adventure game is set. It's more or less a playable manga about an Alien-esque xenomorph loose in the station. Like many of the PC games of the era, *Jesus* is a text-heavy adventure, largely made up of static images and loads of dialogue.

"You have to understand that PC-88 is not made for gaming," Redon says. The computer didn't have hardware to support sprites or even scrolling, but developers worked within those limitations to make games that took advantage of the PC's strengths: high-resolution monitors, storage space, and, starting with the 1985 model PC-88 MkII SR, a Yamaha sound chip that could do FM synthesis. It was the predecessor to the Sega Genesis/Mega Drive's famous chip, and gave musicians the power to write music that still sounds fantastic now.

Misty Blue is the perfect example. It's a mystery starring a young musician trying to clear himself of a murder, with a banger of a concert intro. "At that time, it was the most advanced graphical game you could find," Redon says. Again it's essentially a digital comic, more stills than animations, but the pixel art is almost TV anime calibre. And that music. A year before he did *Streets of Rage*, Yuzo Koshiro was channeling '80s eurobeat pop into lively chiptune.

Enix's list of '80s PC games goes on and on, unknown in the west. Enix published the first videogame adaptation of Fist of the North Star, the famously ultraviolent, post-apocalyptic battle manga (you may know it from the 'You are already dead' meme). There's *EVO: Search For Eden*, which actually was released in North America. Except that was the Super Nintendo version, a platformer, while the original is an RPG.

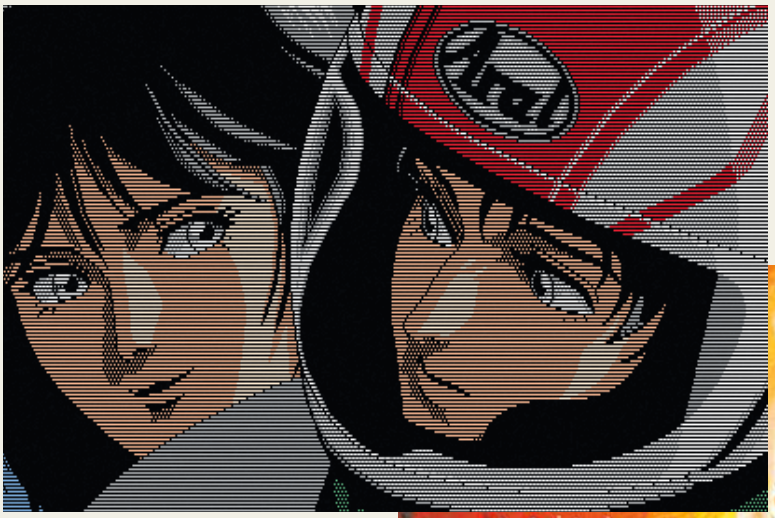
"For me, it's like a small bubble in PC history, where we're not here to make money," Redon says.

GAME ARTS: THE TECH WIZARDS

While Enix released RPG and adventure after RPG and adventure, a small developer named Game Arts was doing things with PCs no one thought possible. They were making shooting games, and they were good.

"They knew how to use the hardware, to push the limits," says Redon. Their first game was 1985's *Thexder*, a 2D platformer where you control a robot (which, of course, transforms into a jet) and fire a laser beam that undoubtedly blew the minds of kids used to slow-paced visual novels. Its follow-up, *Silpheed*, is even better (though it's hard as hell).

At the time, most developers were releasing new games every few months. *Silpheed* was hyped up in

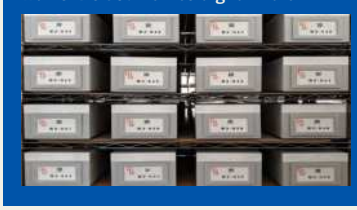


PRESERVE THE PRESERVATION SOCIETY

Donations welcome

Redon and a small group founded the nonprofit in 2011, and most of the money spent to acquire and archive the games comes from its members. Each game component is carefully stored separately. Glossy paper covers are flattened in protective portfolios. Manuals and disks are stored separately, in special envelopes that won't damage the paper. It's all meticulously catalogued in a temperature-controlled archive, with a digital database full of information on every game.

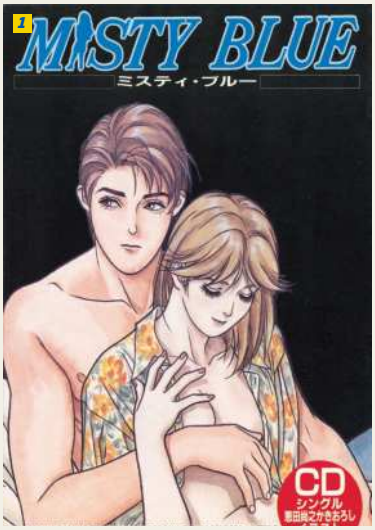
Most of that information isn't available online, yet, but a public database is in the works. Visit GamePres.org for more.

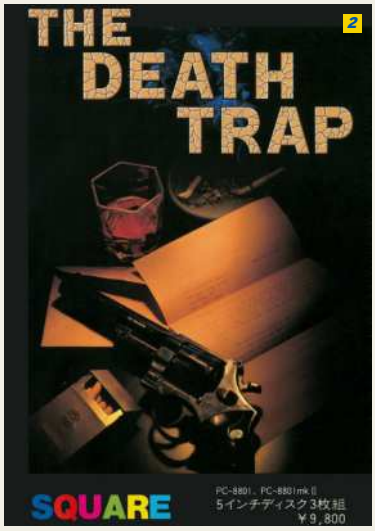


magazines, but it took a long time to finish. "People thought it would never come out and that for Game Arts, it's over," Redon says. "You have people to feed, a company to run. You don't put all your eggs in one basket and wait more than one year for a single title. But the game came out. And they wanted it to be perfect. So it was worth it." *Silpheed* is, notably, the first game to feature a digitised Japanese voice.

After *Silpheed* Game Arts made *Zeliard*, a platformer that actually came west for MS-DOS. Soon after Game Arts would transition to consoles and RPGs, with now-classics like *Lunar* and *Grandia*. But they left a mark on the PC in just a few short years. Game Arts even made a mahjong game that Redon holds up as a rarity from its era with genuinely good AI.

"There's no crappy game from Game Arts. It's a team, from the beginning, of people who want to make great games. They know what they want, and what is a good game. So I think they helped to really increase the quality of games on PC, and it's really a challenge to release a shooting game on a PC [at that time]."





SQUARE: THE HUNGRY NEW KIDS

Today, Square and Enix are united, but before *Final Fantasy*, Square was a far humbler company. In the beginning, like Enix and Game Arts, Square was all about the PC.

Its very first game was called *The Death Trap*, a silent 1984 text parser adventure with rudimentary art. "There is one very interesting thing about *Death Trap*. Until then, all adventure games in Japan, you had to type the commands in English," Redon says. "*Death Trap* was the very first one in Japan where you can not only enter your actions in Japanese, but also in English." And why were they English in the first place? "Because they were copying Apple II games," he quips.

1986's *Alpha* is notable for being an 'eroge' or erotic adventure game from Square, but *Cruise Chaser Blassty*, released the same year, has more going for it. It's one of the first game designed by *Final Fantasy* creator Hironobu Sakaguchi, with Nobuo Uematsu's first game music. And it's a super cool mech sim

Where Enix released excellent games throughout its entire PC life, Square was a humble developer until its big break with *Final Fantasy*.

None of its PC games were big hits or left a lasting impression. But they do offer some insight into the truth behind the legend that *Final Fantasy*'s name came from Square's last-ditch effort to stay alive. Redon doesn't know if that's true, but he does have a theory.

"What you have to understand is that making a Famicom game – you needed to put cash on the table to get the licence. It was 500 million yen. Huge. So if they had decided not to release a Famicom game, they're okay. But they couldn't fail. That's different. They were clearly looking for a smash product."

THE REST IS HISTORY

Seeing just a fraction of the games Redon has dedicated his adult life to preserving is a bit like opening Pandora's box. I know, now, how many games I will never have the time or Japanese proficiency to play. It's also scary how perilous their survival is.

There's simply less interest and nostalgia for them. And when 50,000 sales is a major success, you can guess how few copies of some of these games survive.

"We are going where no one is going," Redon says. "We are not only into PC games, we're into the preservation of games. Everything. But there are priorities.

"And the priority is stuff which is decaying very fast, stuff in which people have no interest, and stuff which is difficult to preserve."

In other words, saving Japan's retro PC games, before they're forgotten by history or succumb to the bit rot that will eventually consume every disk, tape, and CD on Earth. It's far from an easy job, but it's wonderful that someone is doing it. ■

"WE ARE NOT ONLY INTO PC GAMES, WE'RE INTO THE PRESERVATION OF GAMES"

1 *Misty Blue* looked and sounded phenomenal in its day.

2 In its early PC days, Square just couldn't land itself a big hit.

3 This adventure game has as much to do with Casablanca as *Jesus* has to do with Jesus.

4 Dragons were everywhere in the '80s, turns out.

GO FOURTH AND MULTIPLY

FLIGHT SIMULATOR 4.0, the sim that started a subculture.

By Tim Stone

Ten years after the Wright Brothers outwitted gravity at Kitty Hawk, the revolution they started went into overdrive when European militaries realised flying machines were useful for more than just reconnaissance. *Microsoft Flight Simulator* experienced a similar growth spurt a decade after its birth, but happily in its case all-out war wasn't the spur.

Flight Simulator 4.0 inadvertently turned a franchise into a hobby by throwing open the hangar doors to all and sundry. The 1989 release came with a simple tool that allowed users to tinker with airframes and flight characteristics. More significantly, it was designed with the kind of porous edges and friendly file formats that helped people to build tools for it.

Soon meddlers had access to a pair of powerful aircraft and scenery editors. Within a few months the sim's high-detail landscape areas were multiplying furiously and being shadowed by all kinds of exotic cloud cleavers. There were bat-shaped Horten flying wings buzzing the tower at Meigs Field; low-flying supersonic SR-71 Blackbirds spooking invisible motorists on the Golden Gate Bridge; X-wing fighters barrelling down Broadway.

Since websites like FlightSim.com and Avsim.com weren't even eye twinkles at the time of this flowering, *FS4*'s enthusiastic band of fuselage sculptors and landscape gardeners relied on CompuServe's 'FSFORUM', the sim community's very first online meeting place, for distributing and discussing their wares. Little did they know it, but these pioneers were laying the foundations for what is today, gaming's most enduring cottage industry: *FS* add-on crafting.

PLANE PLETHORA

If it has wings – fixed or rotary – and has ever carried a homo sapien aloft, there's a pretty good chance you can fly it in a recent version of *Flight Simulator*. For an aviation enthusiast like myself, one of the joys of the series is that I can slip a bookmark into a pilot memoir or reference book, and, within minutes, be sitting in the cockpit of one of the machines I've just been reading about.

Today the choice of aircraft is dizzying. Fortunately for those of us with slim wallets and limited leisure time, for every £75 jetliner so brain-bruisingly faithful that customers use real aircraft manuals as training aids, there are hundreds of free or far cheaper offerings that can be enjoyed without hours of preliminary PDF study. Repaints, scenery enhancement packs, mission-style adventures... if you're not careful you can spend more time downloading and installing tempting extras than sampling them.

FLYING LESSONS

The failure of aspiring *Flight Simulator* replacements such as *Microsoft Flight* and *Flight Sim World* illustrate just how important open architecture is to a community that has known little else for the past 30 years. Both Microsoft's and Dovetail's short-lived experiments felt restrictive in comparison with what had come before and suffered for it.

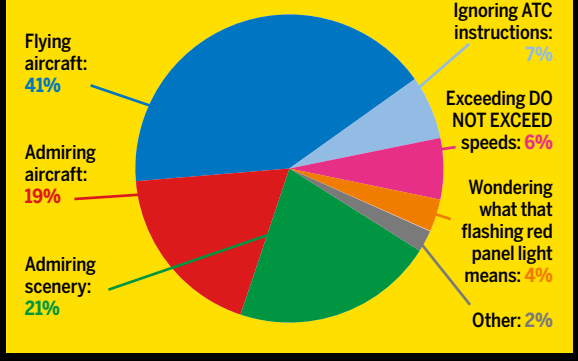
Will the newest *Flight Simulator* make the same mistake? It's hard to tell how the landscape will look while it's so young. Third-party add-ons are part of the grand plan, but until the dust settles it's difficult to predict how enthusiastically the newcomer will be received by the hundreds of studios that are fixated on *Flight Simulator X*.

Sadly, the newest instalment isn't as overtly playful as *4.0*. Lurking under an unapologetic 'ENTERTAINMENT' heading in the veteran's menu are a host of modes designed to appeal to thrill-seekers rather than autopilot programmers. You can dogfight, barnstorm, crop spray and alight on carriers, when the crosswind low-visibility landings cease to stimulate. I hope Asobo's plan for future offerings aren't so busy being ravishing and realistic that they forget to include a few similar activities. Aerial firefighting, air ambulancing, or helicopter cattle driving, anyone?

But it's *Microsoft Flight Simulator*'s attitude to add-ons that could make or break it in the eyes of some silver-templed simmers like myself. *FS4* opened an aeronautical Aladdin's cave and I'd hate to see that cave closed off. ■

BLACK BOX

How I pass the time during an* FSX *flight


Flying aircraft: 41%
Admiring aircraft: 19%
Admiring scenery: 21%
Ignoring ATC instructions: 7%
Exceeding DO NOT EXCEED speeds: 6%
Wondering what that flashing red panel light means: 4%
Other: 2%

ABOVE: Textures wouldn't arrive until *FS5*.

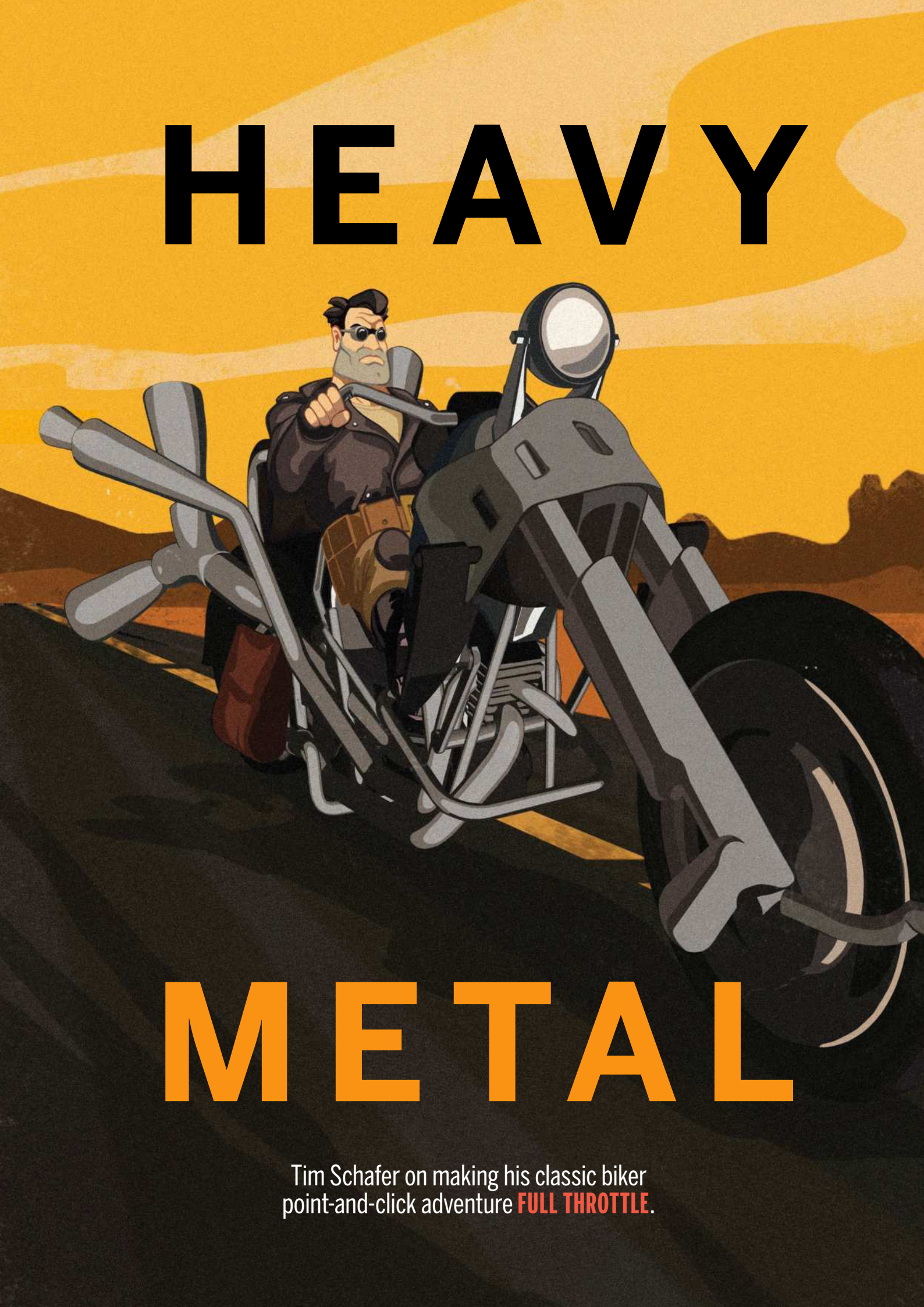
FAR RIGHT: *SimplePlanes*' great great grandfather.

BELOW: *FS4*'s mouse utilisation was absolutely superb.

1 MODE 2 VIEWS 3 ENVIRO 4 SIM 5 NAV/COM
EXPERIMENTAL AIRCRAFT DESIGNER
X Reset Design Parameters
Rotate: 1 heading 2 pitch 3 bank 4 freeze 5 reset
Main Wings
A dihedral (degrees) : 00006
B span in feet : 00027
C aspect ratio : 002.70
D winglets
Stabilizers
E tail area : 00035
F horiz stab position : 00540
G horiz stab area : 00060
Propulsion
H Source: JET
I Power: LBS 10000
Menus
J COLOR DESIGN...
K ADDITIONAL PARAMETERS...
ESC Exit this menu
SPACE Return to simulator
FLIGHT SIMULATOR V4.06

FLIGHT SIMULATOR 4.0 INADVERTENTLY TURNED A FRANCHISE INTO A HOBBY

HEAVY METAL



Tim Schafer on making his classic biker point-and-click adventure **FULL THROTTLE**.

By Andy Kelly

Ben is not your typical adventure game hero.

In 1995 LucasArts released *Full Throttle*, a point-and-click adventure with a difference. You weren't playing as a lovable goofball like Bernard Bernoulli from *Day of the Tentacle* or *Monkey Island*'s Guybrush Threepwood, you were a tough, gruff biker called Ben who used his fists and feet as much as his brain.

At the time a LucasArts adventure was expected to sell around 100,000 copies, but *Full Throttle* sold over a million. And, 22 years later in 2017, the game was re-released with remastered graphics and audio. I ask the game's writer/director Tim Schafer what it was like going back to something he made when he was in his early 20s.

"It's been interesting looking at how I wrote dialogue back then based on my life experiences at the time, and how I interpret it differently now that I'm older," he says. "And now that I've actually been a biker on the run for a crime I didn't commit, that adds a lot of depth to it too. I had no idea what that was like back then."

Full Throttle was a huge leap from *Day of the Tentacle*, with fullscreen animation, 3D models, and lavish production values. "We got a lot more ambitious," says Schafer. "We had all these kinetic, cinematic chase scenes with 3D vehicles, and that scope really hit us hard when we realised how much time it would take to make. We tried cutting some stuff, but it was still a huge, expensive project."

But he still has fond memories of working on the game, particularly how encouraging LucasArts was. "We got the support we needed to make the game great," he says. "Quality was always the number one thing there, and that came from the top. George Lucas »

Ben takes shape, from an early sketch to the finished design.

and ILM weren't making B-movies, so we couldn't make B-games. We had this idea that we had to be the best and that was something George made clear in his directives to LucasArts."

Even though *Full Throttle* isn't set in a post-apocalyptic world, it has a desolate, hopeless quality usually found in that kind of fiction. "We were definitely inspired by Mad Max, but not in the sense that the world's a wasteland. It was mainly the stoicism of Max as this tough guy hero. He's capable and smart, but calm and quiet too. He's not looking for trouble, but it always finds him."

The Mad Max influence also extends to the direction of the cutscenes. "Strapping the camera to these outrageous vehicles, low to the ground, making everything feel super fast." And the game's memorable intro sequence, which begins with a shot of an empty road and a melancholy narration, was a tribute to the beginning of Mad Max 2, as well as biker film The Wild One.

The Akira Kurosawa film Yojimbo was another cinematic inspiration, both for Ben and the general tone of the game. "Toshiro Mifune's character is an out-of-work samurai just looking to get by, and he keeps getting stuck in the middle of these warring clans and other situations that force him to reluctantly unsheathe his sword."

Ben's never happier than when he's on the road.

ART AND SOUL

Artistically, *Full Throttle* still holds up. Longtime Schafer collaborator Peter Chan, who was also responsible for some of the most memorable visuals in *Grim Fandango*, was the lead artist. "We loved making *Day of the Tentacle* look like a Chuck Jones cartoon, but a lot of people thought it was too childish," says Schafer. "So with *Throttle* we wondered if we could do cartoony, but for adults."

"WE'D TAPE MICROPHONES TO MOTORCYCLES AND DRIVE THEM AROUND TOWN"

Chan looked to Mike Mignola's Hellboy comics for inspiration. "His backgrounds are really minimal, with a lot of silhouettes and dark spaces that draw your eye to the characters and the focal point of the scene," says Schafer. "He was definitely one of the biggest influences on the look of the game."

Full Throttle is also unique in the sense that there's no great, looming threat the hero has to deal with. It's a small, personal story about a fading way of life. "It's so tempting when writing a story to have the world be in danger," says Schafer. "It's a workable plot device. But biker culture's kind of nihilistic, so I thought about what would end the world of a biker. And that would be if the only maker of motorcycles in the country switched over to making hovering minivans. It would be such an affront to everything they believe in."

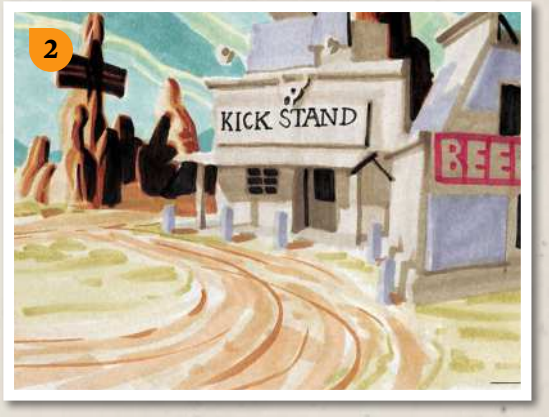
The voice acting of the late Roy Conrad is part of what makes Ben such a memorable and beloved character, and I ask Schafer what he remembers about casting him. "We had all these audition tapes, and a lot of people were playing Ben as this over-the-top tough guy," he says. "But Roy didn't. He was stoic, stern, and had this quality of a guy who just wants to be left alone. He's almost gentle, but he has this rich, deep, resonance to his voice."

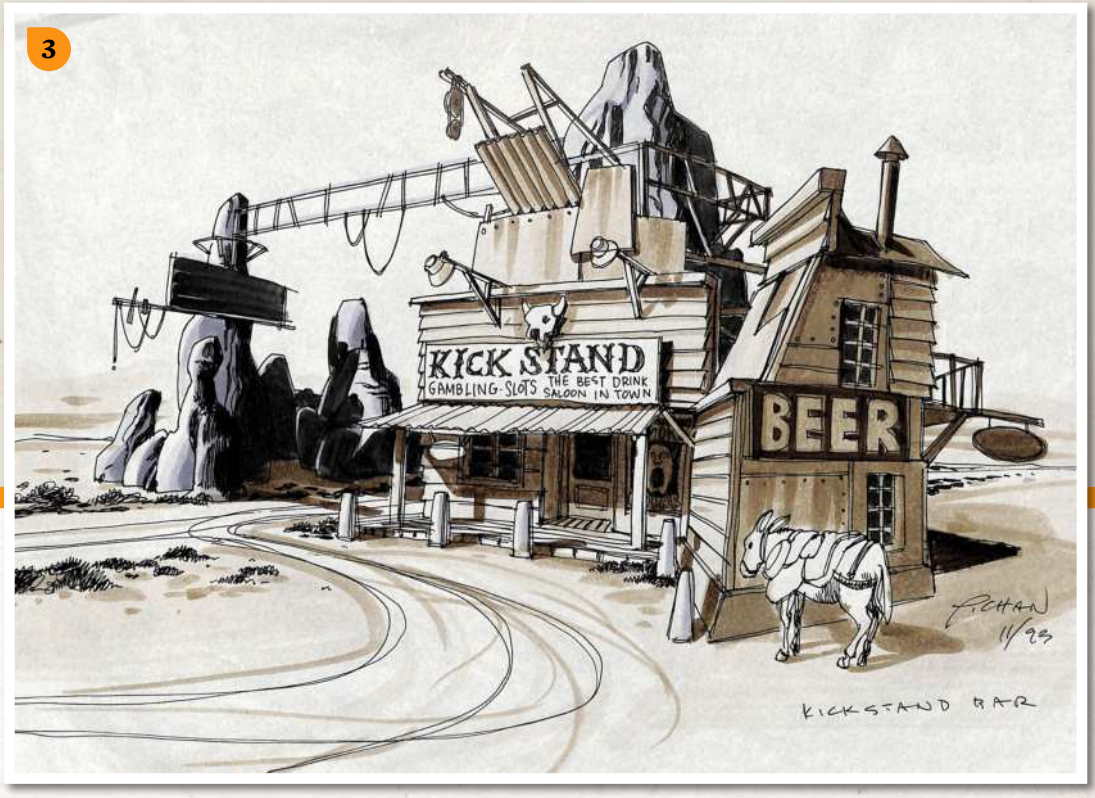
And the music by biker band The Gone Jackals, particularly the theme song, Legacy, is another important part of the game's magic. "Keith Karloff, the

NEW LOOK *How the updated graphics compare*

The old 4:3 aspect ratio backgrounds had to be extended to make them fill a modern 16:9 display.

Even though everything has been repainted, Double Fine stayed as true to *Full Throttle*'s original art style as possible.





1 The Mike Mignola influence is clear in this early pen-and-ink drawing of the Kickstand.

2 An early colour test. The layout is there, but the colour palette changed dramatically over time.

3 And the final design. Except for the donkey, which didn't make it into the finished game, sadly.

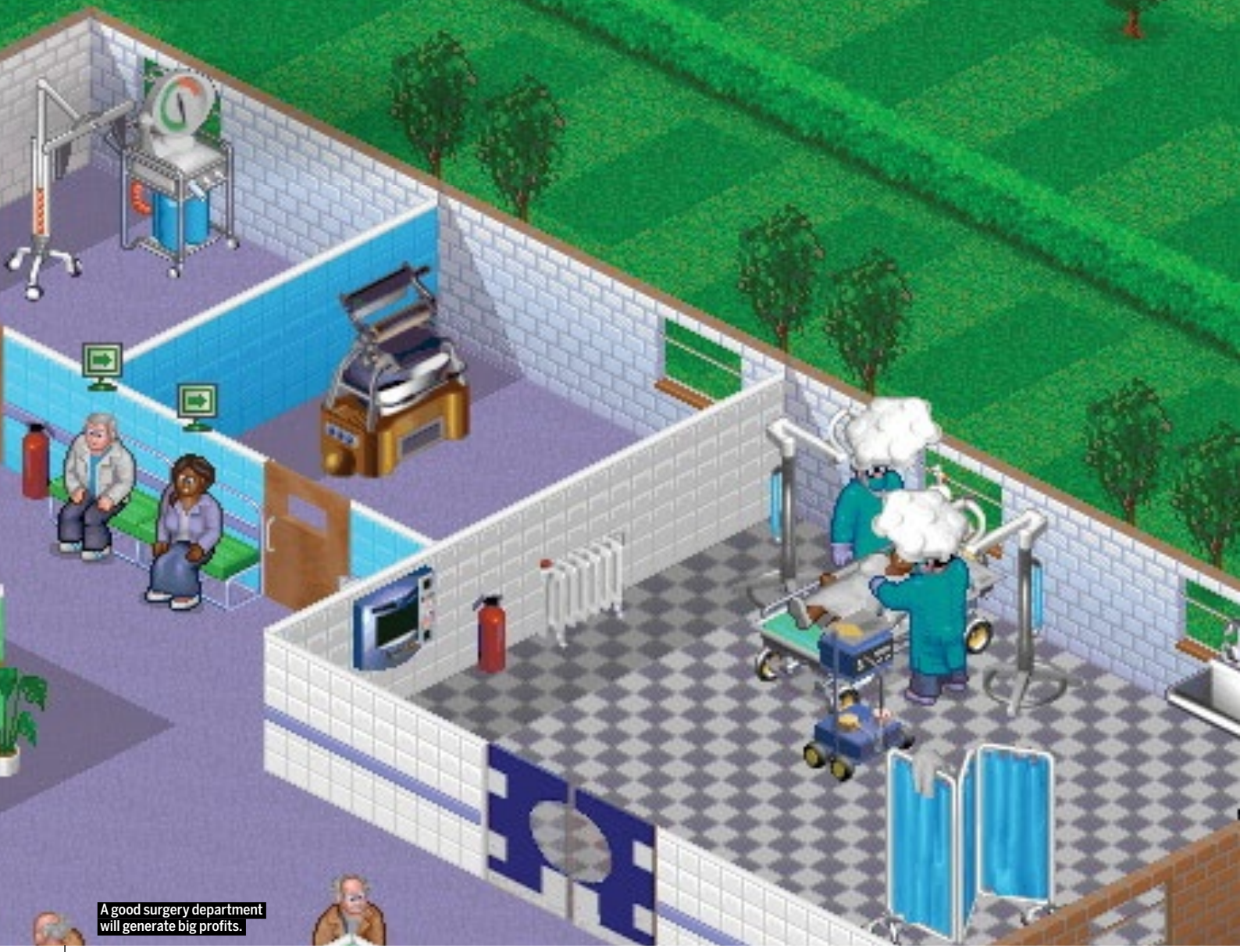
band's founder and frontman, rode up on his Harley and handed the tapes to composer Peter McConnell, and that was it. He knew the culture, he knew the sound, and he knew a bunch of biker guys. We'd meet his friends and tape microphones to their motorcycles and ride them around town."

CLICK STAND

Full Throttle also saw a shift from the old 'wall of verbs' interface that was seen in the likes of *Day of the Tentacle* to something much more streamlined and visual. I ask Schafer about the thinking behind this. "We wanted to have more real estate for the presentation," he begins. "The artists wanted to fill the screen with art. Also, looking up and down constantly distracts from your immersion. So we thought: why can't the verbs just appear right where your cursor is? Because that's where your eye is. And that's where the idea came from." Schafer notes that when *The Curse of Monkey Island* used the same interface later, the development team used a coin, and now people refer to it as a verb coin. "That's wrong!" he laughs. "It's a verb skull!"

As for remastering *Full Throttle* for a new generation, Schafer says he wanted to remain true to the original game. "It's a collaboration of a bunch of artists coming together. The acting, the writing, the sound design, the music. All these people worked together to make this thing, and we don't want to mess with it. We just want to present it in the best way possible, and make it more true to the original intentions. We're getting rid of artefacts, compression, and old tech to make it look like it looked in our minds." ■

Ben and Mo forever.



A good surgery department will generate big profits.

THEME HOSPITAL

Checking back into Bullfrog's management sim. *By Chris Thursten*

T*heme Hospital* has been through several stages of life. At launch in 1997 it was a big deal, the successor to *Theme Park* – the game that made Bullfrog's fortune.

Theme Park was an irreverent, colourful management simulator that turned the Guildford studio from a domestic player to an international contender. *Theme Hospital* adopted *Theme Park*'s tone – and great swathes of its code – and turned it to a different purpose: the running of a profit-driven British hospital where patients suffer from a variety of comedic, and fictitious, diseases. It was softly irreverent in a way that drew flack from government and the press at the time, but would entirely pass under the radar now.

Then *Theme Hospital* found a second life as a bargain-bin perennial throughout the low years of the early '00s. Visit any game shop (remember those?) and there it would be, in a number of different budget imprints. Millions have likely played it. It is kid-friendly but cheeky, lightly strategic but chiefly about having fun with your hospital, its beleaguered staff, and its comedy gadgets. It would run on your parents' PC. It has been worth a fiver for about 15 years and is still worth a fiver today.

GAG ORDER

Indeed, it costs about that to pull *Theme Hospital* down from GOG complete with a DOSBox launcher that bypasses the Windows compatibility issues that plague a lot of games from this era. Brutal but necessary fullscreening of its 640x480 native resolution aside, the process of running *Theme Hospital* on a modern PC is relatively painless.

The flashy-for-the-time opening cutscene is a statement of intent. A helicopter arrives to rush a middle-aged superstar doctor – who is in the middle of a game of *Dungeon Keeper* – to his patient. He bursts dramatically through hospital doors, crushing a nurse. He begins to rev his medical chainsaw, but the patient fails his credit check: a button is pushed and a trapdoor opens. The patient falls into darkness, screams, and the game starts.

It's tempting to try and unpick the politics here but, if anything, Bullfrog was eager to avoid being seen to undermine the practice of running a hospital. *Theme Hospital* is too British to read as a send-up of the US healthcare system, and too playful to come across as a critique of the management of the NHS. Instead,

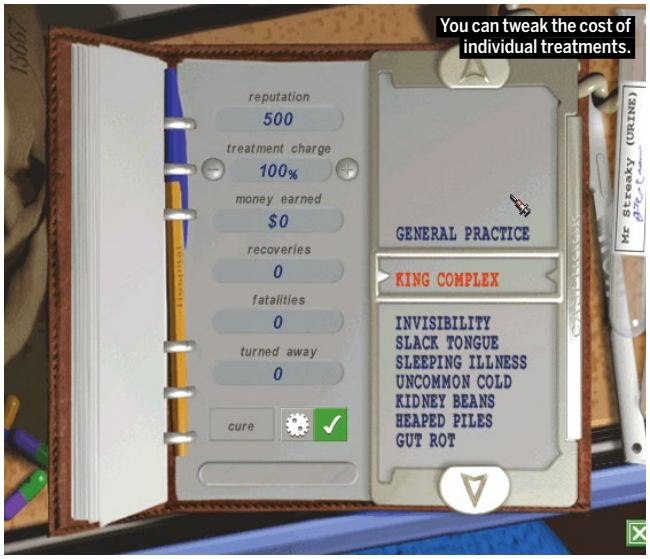
NEED TO KNOW

RELEASED
March 31, 1997

DEVELOPER
Bullfrog

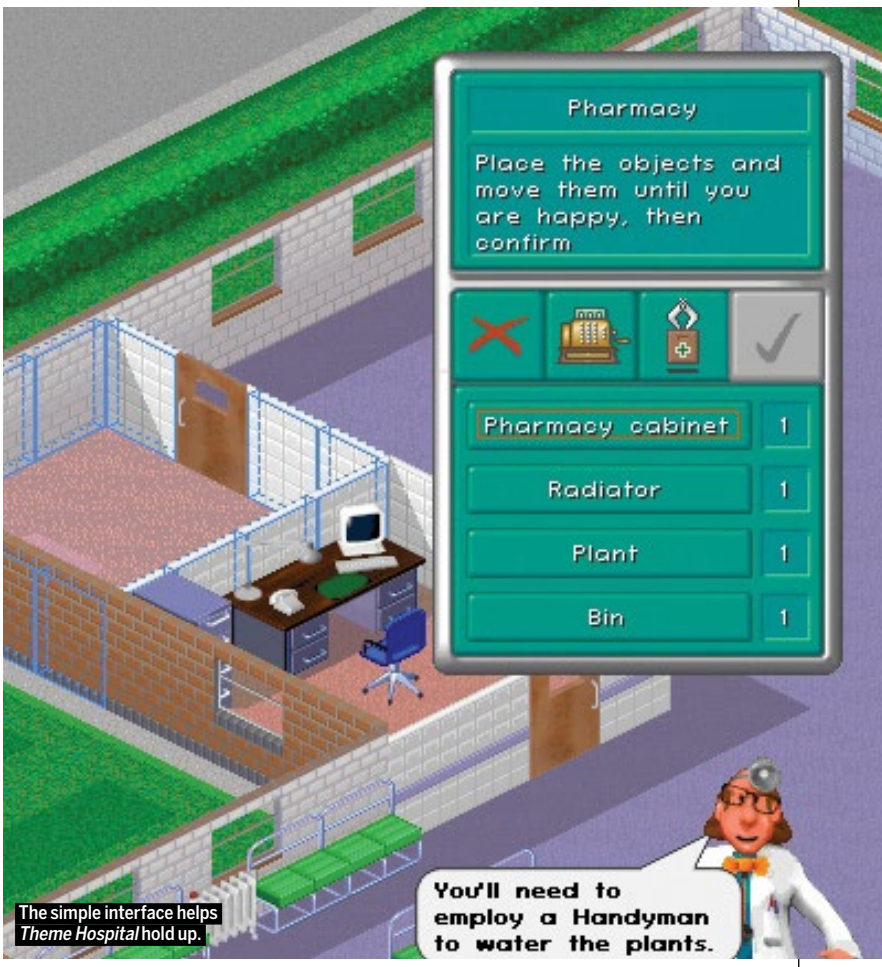
PUBLISHER
Electronic Arts

LINK
www.bit.ly/themehospitalorigin



You can tweak the cost of individual treatments.

Who knows what's wrong with this guy.


Pharmacy
Place the objects and move them until you are happy, then confirm
Pharmacy cabinet 1
Radiator 1
Plant 1
Bin 1
You'll need to employ a Handyman to water the plants.
The simple interface helps *Theme Hospital* hold up.

this is best understood as a comedy management game written and designed by people who watched a lot of comedies like The Fast Show and Red Dwarf – it just happens to have a hospital theme.

PATIENT GROWTH

Each new hospital begins as an empty shell, with new wings available for purchase depending on the level you're playing. Your first job is to create a reception area with desk, benches, vending machines, plants and so on. Then you'll need diagnosis rooms, psychiatrists' offices and wards. After that comes treatment: a pharmacy can handle most cases, while certain daft diseases – such as Bloaty Head, or King Complex, which turns people into Elvis – require special treatment facilities. All of this comes at a cost, which is recouped as patients pay for diagnosis and payment.

You need to provide toilets and rest facilities for your staff, consider heating and keep your corridors clean. You can borrow money to raise the necessary funds, or fiddle with hospital policy to boost profits: like forcing patients to get more diagnoses than they actually need, paying every time. You're being assessed based on how many patients you cure, what proportion of your walk-ins you handle, how much money you make and the overall worth of your hospital. Meet these criteria for a given stage and you're whisked away onto the next right away. There are random events, epidemics and a few Easter eggs: you might get tasked with curing a set of priority patients to a time limit or suddenly contend with an equipment-wrecking earthquake. Otherwise, that's the shape of the game. Build a hospital to spec, watch it run, move on.

You can speed up or slow down time, but you can't change anything about your hospital while you're paused. A modern take on this idea would very likely let you do your planning and building in a paused state and then click 'go' on your new hospital design: that isn't the case here. At the beginning of each *Theme Hospital* level there's a grace period where you can get up and running, but after that you're building as you go. If your receptionist is constantly saying that a doctor is needed in the

ROSE TINTED

Which other Bullfrog games should you revisit?

BEST

DUNGEON KEEPER
A little dated, but still a perfect coming-together of theme, design and humour.

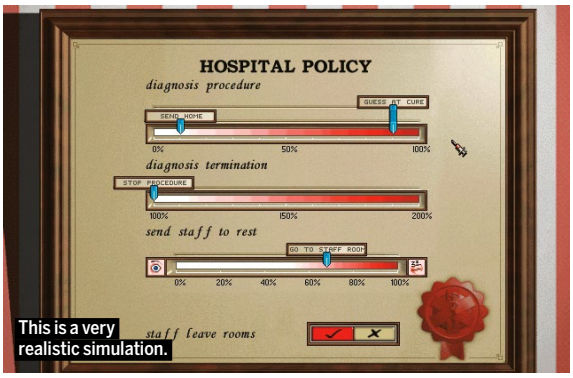
SYNDICATE
This one is desperately deserving of a remake. No, not *that* remake.

MAGIC CARPET
Blew minds due to its visuals and speed: both have, obviously, been exceeded.

THEME PARK
Nostalgia will carry you a long way, but there are lots of good sims nowadays.

POPULOUS
An important moment in game design, but not really a lot of fun to play today.

WORST



general diagnosis department, then that might be a sign that it's time to summon one from thin air. If patients are walking out in disgust because you can't do anything about their grossly-inflated heads, then it might be time to build an extra treatment room on the fly. There's a sense that you're always laying the tracks in front of the train, which is about as close to topical satire as *Theme Hospital* gets.

BEDEVILED DETAILS

The game hasn't entirely aged well, otherwise. It was surprising to load the staff menu for the first time and realise that all doctors and janitors are men, while all nurses and receptionists are women. This isn't a case of the game falling short of modern standards: this was a glaringly shortsighted design decision in 1997, and it's embarrassing that nobody caught it at the time. It doesn't mean that you can't enjoy the game or its humour, but it does highlight why it's important to be circumspect about your nostalgia.

What endures about *Theme Hospital* is its sense of fun. It's a management sim, sure, but it's also a toybox come to life: a little world populated by tiny people where half the enjoyment comes from setting them in motion and watching them go. It's all in the details: the agonised low-fi straining and plopping sounds that accompany a man doing a poo in your splendid new toilets, or the hearty pop that precedes a patient having their head reinflated.

As a Bullfrog game, *Theme Hospital* is obviously on a continuum with *Theme Park*, but it's also a peer of *Dungeon Keeper* and *Syndicate* – games that were all about extracting maximal interactivity from an isometrically-viewed environment. In *Theme Hospital*, a rat infestation might mean hiring more janitors: a typical management sim solution, a matter of matching the need against your balance book. On the other hand, you might hunt across the screen for the rats yourself, batting them from the sky in an impromptu game of Where's Wally-turned-Whac-a-Mole. Do this enough and you get to visit a bonus stage.

ONLY '90s KIDS WILL REMEMBER

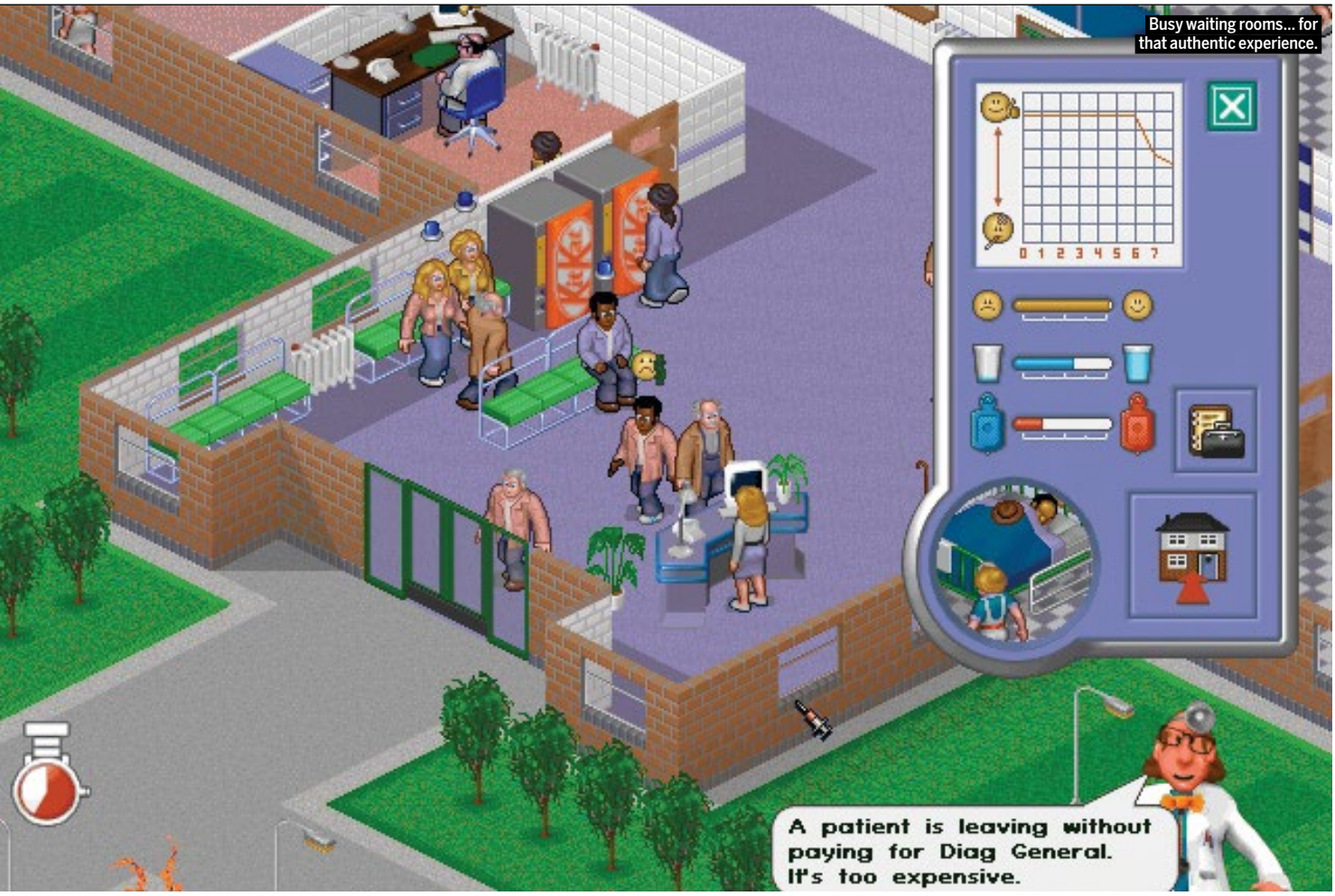
Theme Hospital's *most dated details*

KIT-KAT VENDING MACHINES
Videogame candy sponsorship didn't survive the previous century, for whatever reason.

FAXES
Like a black-and-white motionless Snapchat sent to your parents' printer, with a phone grafted onto the end.

MULTIPLAYER MENUS LIKE THIS
Back in my day of dial-up, we *earned* our dozen or so minutes of functional multiplayer.

INTEREST RATES ABOVE 1%
How to explain this... right, so, there's this thing called a mortgage and it kind of makes you want to cry...



Busy waiting rooms... for that authentic experience.

IT'S NOT GOING TO WOW YOU TODAY, OF COURSE, BUT THAT PLAYFUL ENERGY REMAINS

There's a bit of magic to this that has survived the decades. This is a game that wants to reward your purchase of a powerful, shiny new CD-ROM drive ('00s/'10s kids: imagine a fidget spinner that is also a USB stick that you feed into a mouth on the front of your PC). Bullfrog knew what it was doing with a CD by 1997, but this is nonetheless a game from an era when designers were animated by the silly, clever, fun things that improving tech allowed them to do. There's an inherent playfulness here that is formed at the point where Bullfrog's studio culture met better, more liberating tools: if *Theme Park* was the chips-down risk that helped the team build a reputation and allowed Molyneux to sell the studio to EA, then *Theme Hospital* is the game that happens when EA's money arrives.

It's not going to wow you today, of course, but that playful energy remains – and there's still charm to its pixelated patients and chunky hospital furniture. Stare at any given part of your creation for any given time and you'll see something to make you smile, whether that's a patient's bum sticking out of their backless surgery robe or a janitor coaxing a wilting fern back to life with a watering can and happy slurping sound.

You'd want any successor to this game – *Two Point Hospital* included – to retain that eagerness to surprise you and make you laugh. Modern management games have different priorities. They've gotten better at giving you the power to customise your creations and place more emphasis on creating a sense of attachment. That aspect is curiously missing from *Theme Hospital*: this is very much a level-based game, with the predefined outlines of each new hospital wing dictating the shape of the puzzle you have to solve.

CLINICAL IMPRECISION

If you want your theme parks, star empires and sim cities laid out just so then it can be a bit unsettling. Hospital rooms have minimum sizes and they don't always line up neatly. The ever-ticking clock punishes fiddling and, while a failing hospital might limp on for a decent stretch of time, a successful hospital – one that meets the conditions of the level – will be suddenly and unceremoniously snatched away from you as you're hurried to the next challenge. It's a toy, but one with some stringent limits on the ways you get to play with it.

The best way to enjoy *Theme Hospital* now is to load it up on the easiest difficulty setting. That way you get to play around with making your ideal hospital in your head without worrying about some of the game's deeper management elements. You can tinker with the cost of specific cures to maximise profits from particularly common ailments, for example, or tweak pay to min-max your staff morale. This is good and necessary from a management game perspective, but if that's your priority then better games have been released in the last two decades. Come back to *Theme Hospital* for the jokes, the fun pixel art, the daft little animations, and the excellent fart noises. ■

"The way enemies explode into chunks is gruesomely satisfying"

Sometimes *Quake II* rendered *over 17* polygons per frame.

QUAKE II

It's time to revisit id's legendary FPS. *By Andy Kelly*

The original *Quake* was a muddy medieval world of knights, Lovecraftian horrors, and grim castles. But the sequel, cleverly titled *Quake II*, goes in a different direction entirely. You're a space marine, naturally, who has crash-landed on an alien world called Stroggos. In a desperate attempt to prevent an invasion, Earth sent an army to the distant planet, but the Strogg knew you were coming and your arrival was a slaughter. The dropships were shot down by anti-air defences and pretty much everyone died, except you. And so, in true id Software FPS style, it becomes a solo mission.

There's a chance you don't remember any of that. After all, *Quake II* is not a game renowned for its deep, complex sci-fi storyline. But the inclusion of a plot, and mission objectives, was pretty unique for an FPS in the late '90s. As you play, a robotic voice regularly drones "computer updated" and gives you mission objectives. By modern standards that's completely unexciting, but back then it set *Quake II* apart from id's other shooters. It was more cinematic, and your actions felt somehow more meaningful. And by 'your actions' I mean 'shooting', because that's the beating heart of the game. Shooting things, and avoiding being shot.

At the time, *Quake II* was a technical marvel. Powered by the id Tech 2 engine, it boasted features that seem unremarkable now, but were amazing in their day. Hardware-accelerated graphics, coloured lighting, skyboxes, and the ability to return to previously completed levels were among its once groundbreaking features. After the release of *Quake II*, the engine powered several other games, including, in the early stages of its development, *Half-Life*. *Quake II* also had massively improved networking, making it one of the best early examples of an online FPS. Mod support also dramatically extended its lifespan for anyone lucky enough to have an internet connection.

NEED TO KNOW

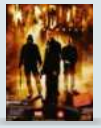
RELEASED
December 1997

DEVELOPER
id Software

PUBLISHER
Activision

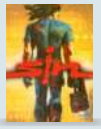
LINK
www.idsoftware.com

SOURCE CODE
Other games that use the Quake II *engine*



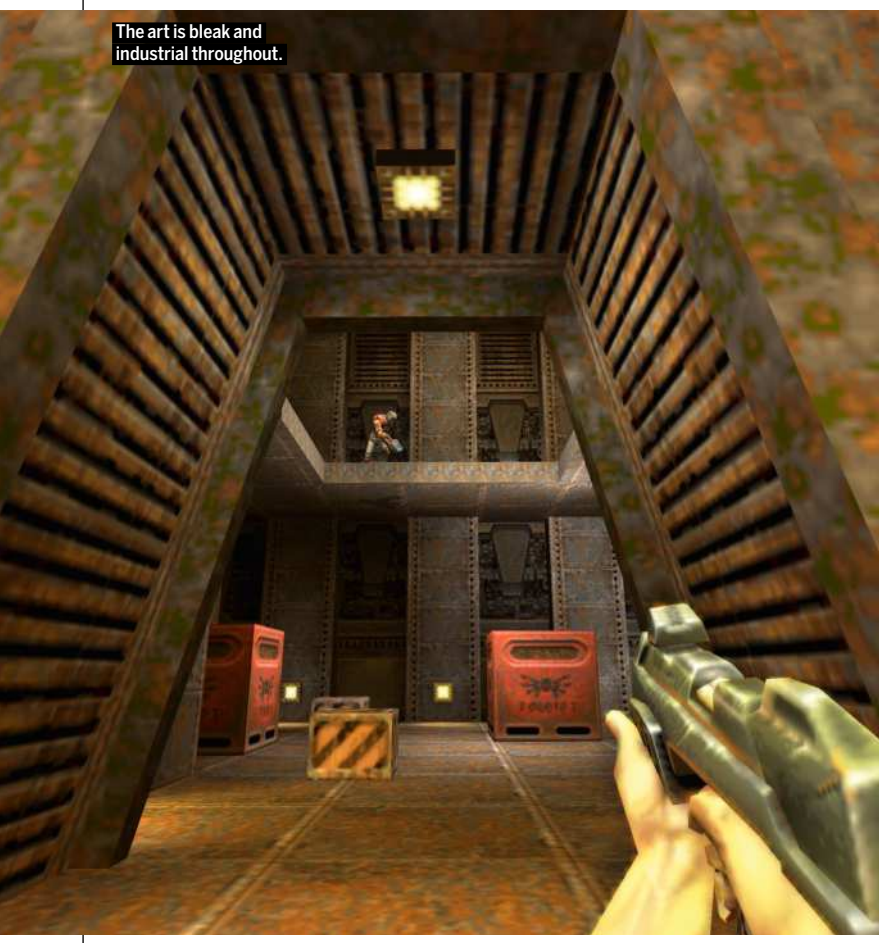
KINGPIN: LIFE OF CRIME
A violent, foul-mouthed first-person crime caper with a Cypress Hill soundtrack.

SOLDIER OF FORTUNE
A forgettable shooter, made infamous by the ability to shoot individual body parts off enemies.



SIN
A cinematic FPS with detailed, interactive levels. One of the most impressive uses of the engine.

DAIKATANA
Not as bad as you think, but still a broken, ugly game that failed to live up to the ludicrous hype.


The art is bleak and industrial throughout.

That's right, stand near the explosives.

The lost art of the gib.

People are still making mods today, in fact, including a few that let you play the game at high resolutions and with some graphical improvements. It'll still look like a game from 1997, but it makes it a bit more tolerable to modern eyes. Character movement is mapped to the arrow keys by default, but after some rebinding you can have it playing like a modern FPS. Although, weirdly, strafing is faster than moving forward and backwards. A strange sensation that took me a while to get used to. But for such an old game, *Quake II* is surprisingly playable.

A big part of this is its arsenal. It's still one of the finest collections of FPS guns on PC, and every weapon you wield has a distinct personality. The chaingun rattles at incredible speeds, getting steadily faster the longer you fire it. The super shotgun is like a handheld anti-aircraft gun, and you can almost feel the power as you unload it into an enemy and hear that echoing *boom*. The exaggerated kickback on the machine gun, which rises slowly as you fire, gives it a sense of physicality. And I love it when you fire the grenade launcher and hear the metal clink of the grenades as they bounce around the level. Every weapon, except maybe the blaster, is a joy to fire.

But the best of the lot is the railgun. This metal tube of death fires depleted uranium slugs at extremely high velocities, which leave a blue corkscrew of smoke in their wake. The railgun is incredibly accurate – it's like a sniper rifle without a scope – and it can cut through several Strogg at a time. In fights with multiple enemies, a useful strategy is running around until a few of them are lined up, then firing a slug. Seeing it tear through a line of bad guys is one of the greatest pleasures in first-person shooting.

ENEMY TERRITORY

And the things you shoot are just as well-designed. *Quake II* has the standard FPS structure of starting you out against small groups of easily-killed grunts, increasing the challenge the deeper into the game you get. In the first few levels you're fighting shotgun-toting Guards, beefy Enforcers with chainguns, and Berserkers who lunge at you with big metal spikes – and later fire rockets at you. The way enemies explode into chunks of bloody meat, or 'gibs' to use the parlance of the times, is still gruesomely satisfying. And there are other grisly touches, like when you don't quite kill an enemy and they squeeze off a few extra shots before they finally collapse and die.

But this is just to ease you in, and it's not long before id starts throwing its meanest creations at you in force. The Strogg are weird cyborg hybrids, with mechanical limbs and eerily human, grimacing faces. Gladiators stomp around on metal legs, firing their own version of the railgun at you. Mutants are angry, feral beasts who pounce on you, usually from dark corners. Brains, perhaps the weirdest enemy, attack you with tentacles and blood-stained hooked hands. There's a huge variety of things to kill, all with unique behaviours and weapons, which keeps the game interesting – especially when you're facing several types at once.

The hardest thing to stomach when revisiting *Quake II* is how brown it is. The switch from dark fantasy to sci-fi leaves the levels brutal, industrial, and metallic. There isn't much variety or detail in the environments, and the colour palette

Lasers and a cyborg dog. Yes, this is a '90s FPS.

IT'LL STILL LOOK LIKE A GAME FROM 1997, BUT MODS MAKE IT EASIER ON MODERN EYES

is depressingly muted. The actual design of the levels is great, with plenty of secret areas and multi-level arenas to fight in, but the lack of colour and almost nonexistent world-building make it feel like a bit of a slog at times. But I remember thinking this back in 1997, and really it's a game about combat, not drawing you into its world. And since the Strogg live only for war, I guess it makes sense that their planet would be like one giant factory.

When you've fought your way through the Strogg and infiltrated the headquarters of their leader – a space station in an asteroid belt above the planet — it's time to complete your final objective: kill it. The Strogg leader is called The Makron, and it's a two-stage boss fight. Its first form is a powerful exoskeleton which comes equipped with a BFG10K, the most powerful weapon in the game. And, unlike your own BFG, it can fire it multiple times in quick succession.

FINISH LINE

When you destroy the mech, it's time to kill The Makron itself, which also has a BFG as well as a blaster and a railgun. Luckily, the arena is littered with power-ups, health, and ammo, including a secret underground chamber that can be accessed by pressing a hidden switch. When the boss falls, you step into an escape pod, and that's it. 'The End' unceremoniously flashes up on the screen, and your only choice is to go back to the menu. Imagine if a game ended like that today.

Quake II is still a great game, and I'm surprised by how well it holds up. There's something about the feel of the weapons, the way they're animated and how they sound, that makes them some of the best examples in the genre. Even the new *Doom*, which is a fantastic ode to this era of shooter design, doesn't have anything quite as enjoyably punchy as *Quake*'s railgun. ■

STROGGS GALLERY *Some of the fiends you'll encounter*

FLYER
The inevitable flying enemy. Fires blasters, easy to take down.

SHOTGUN GUARD
A generic goon packing a shotgun. A mere inconvenience.

ENFORCER
A fat-headed grunt with a chaingun. Can soak up a lot of damage.

BERSERKER
Moves fast and lunges at you with a pair of robotic death-arms.

TANK
A lump of metal pain. Deals three types of damage including rockets.

WEAK — TERRIFYING

UNFORESEEN CONSEQUENCES

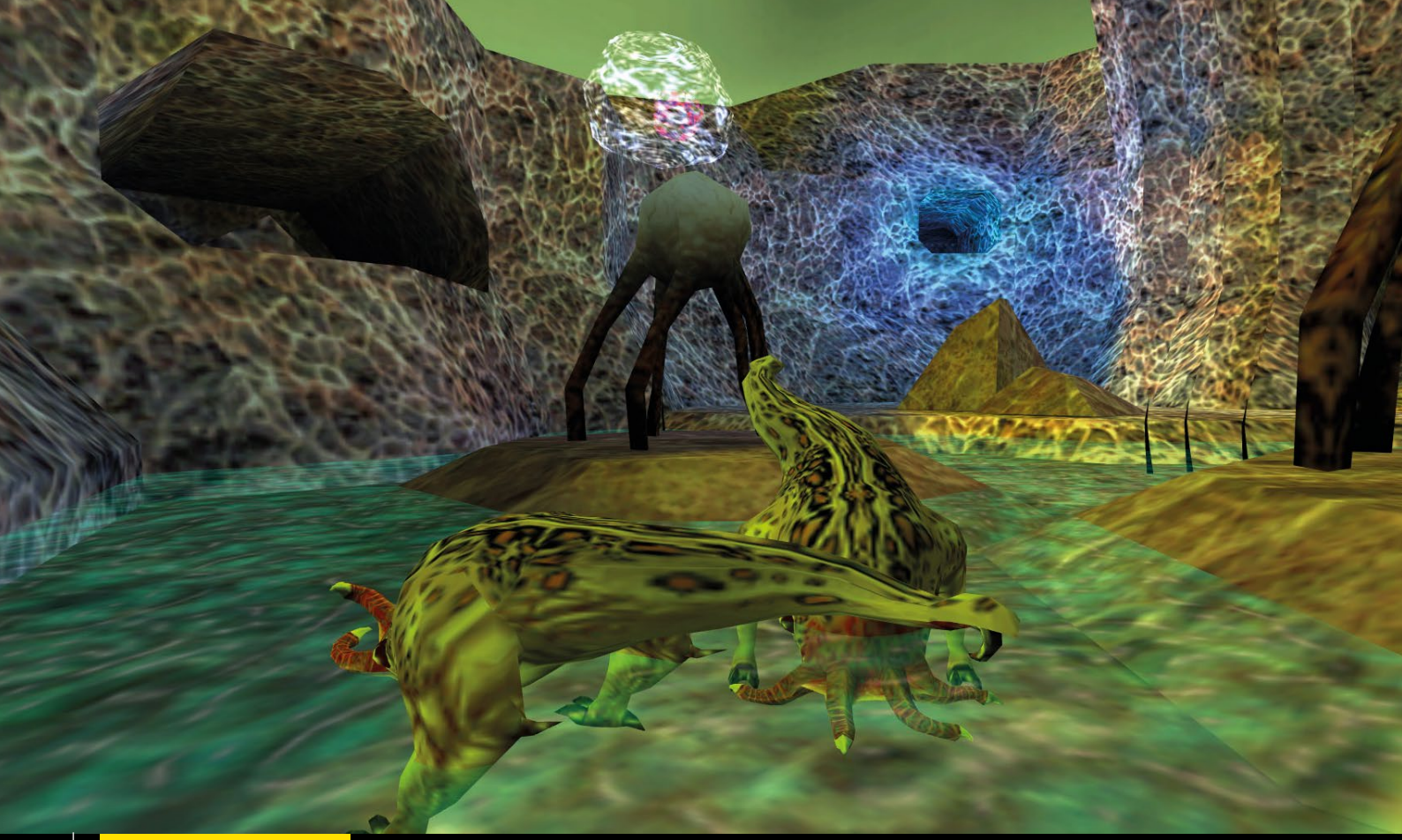
Over 20 years later, **HALF-LIFE**'s influence is still being felt.

By Jody Macgregor

I recently spoke with Vincent Adinolfi, an indie designer working on a game called *Heartworm*. It's a low-poly 3D survival horror, so when he brought up influences like *Silent Hill*, *Resident Evil*, and even *Dino Crisis*, that was to be expected. But then he mentioned Valve's classic 1998 FPS. "I've tried to take cues from games like *Half-Life* in the way that Valve uses environment design to naturally develop the narrative," he says.

It's not the first time I've heard developers namecheck *Half-Life* while making games very different to it. Its effect on the way games tell stories transcends genres. Which is surprising given how few other 1990s shooters even had stories.

John Carmack of id famously said stories are as irrelevant to games as they are to porn, which explains *Quake*. Sure, adventure games and RPGs might need plots, but what does an FPS have to gain? When *Half-Life* proved even a game about shooting zombies could be improved with a memorable story, it made the point for everyone. And it did it



INTERVIEW

Dario Casali
Level Designer, Valve

On *Black Mesa*:
"I played probably five hours of the original *Half-Life* and then I said, 'Well, what are you doing? Just go play *Black Mesa* cause they've just redone this in Source.' Then I just restarted, I started *Black Mesa* from the start. I played through all of that, and they did an awesome job. Such a great execution that I kind of didn't want to go back and play Xen from *Half-Life*."

On underexplored potential:
"With *Half-Life*, I feel like there was such a rich set of mechanics I don't think that we exploited fully. I think we jumped to *Half-Life 2* immediately and then reinvented everything. I think there would have been a lot of room for further exploitation for the use of some of those mechanics and we just never did."

» without cutscenes or a single paragraph of text. Mainly, it did it through Black Mesa.

INTENSIVE SCARES

Half-Life's writer Marc Laidlaw once explained on his blog that *Half-Life* was initially planned to be a nonlinear game. That all changed because, as he put it, "All narrative forms of drama, but especially horror, rely on pacing and rhythm. In horror timing is crucial. You have to set up your traps just so, and wait until your victim is precisely in position."

While shooters had elements of horror – *Doom* had a chainsaw and shotgun because id were fans of Evil Dead II – the games were never horror themselves. They were action in Halloween clothes.

The first third of *Half-Life* is, as Laidlaw says, explicitly horror. There's the slow burn, where we're introduced to the characters at their most mundane, though with teasing hints of what may be about to go wrong. Then we see their ordinary world turned upside down, made dark and broken. Just like Alien, or Night of the Living Dead, or It.

Half-Life's flashlight and its recharging battery are essential to its scares. You crawl through a vent, throwing that pool of light ahead of you, knowing it could run out before you reach the nearest exit. You turn it off to recharge for a moment, flick it back on, and light up a rearing headcrab's underside.

While several shooters after *Half-Life* copied its blend of horror and action, like the *FEAR* series (which also successfully imitated *Half-Life*'s squad AI), its influence was most felt in the first-person horror genre. Every game that gives you light as a limited resource, from *Amnesia* to *Outlast*, has that tiny bit of *Half-Life* in its DNA.

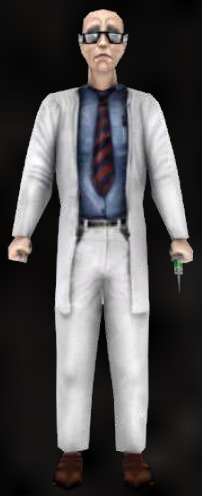
DEAD GOOD

When Laidlaw brought up horror he wasn't just talking about darkness and monsters. He was talking about setpieces. The security guard with a zombie shambling up behind him, or the scientist trying to perform CPR on a fallen coworker. In *Doom* you find dead marines next to some spare ammo – in *Half-Life* you see their deaths and it hits you harder.

Ian Vogel, the level designer responsible for the Med/Sci level in *System Shock 2*, has said these "emotional anchors and prods" were a big inspiration for him. In *System Shock 2* you're on a research spaceship that's been invaded, a scientific facility that's in a similar state of emergency. You see a lot of people in lab coats being dismembered on the other side of bulletproof glass, a trick *Dead Space* would also notably repeat.

This formula – environmental storytelling spread across an impressive but collapsing testament to man's hubris – would see its ultimate manifestation in *BioShock*. Every game that uses deaths on the other side of doors, or bodies carefully arranged on toilets or in beds to tell a little story that you

ABOVE: I'm drawing a line from the Resonance Cascade to *Thirty Flights of Loving*. Then I'm nodding.



arrived too late to see, owes a significant debt to *Half-Life*.

To ensure you catch these moments, *Half-Life* guides you with trails of blood, screams and lights. It hints at puzzle solutions the same way. A vent will have a convenient light shining out of it so you know where to go, a switch gives off sparks to suggest it's connected to the sparking wire hanging in the water, a jumping sea-monster makes you look up at a shark cage, bubbles suggest life-saving breathing spots.

These techniques for pulling your eyes would be further refined in *Half-Life 2*, where a flying ship might draw your attention up to note a climbable spot, or a green light shine on an exit. From there they propagated, and everything from *Call of Duty* to *Mirror's Edge* signposts paths with *Half-Life*'s tricks.

MOD NATION

That's all on the single-player side, but *Half-Life*'s influence goes beyond that. Its multiplayer mod scene was as big as *Doom*'s, and gave us *Natural Selection*, *Cry of Fear*, and *Sven Co-Op*, all of which went on to become standalone games. The team behind *Age of Chivalry*, a total conversion which replaced guns with swords, formed Torn Banner Studios and turned their mod into *Chivalry: Medieval Warfare* – which received a sequel in 2021.

Rights to the World War II mod *Day of Defeat* were bought by Valve and it too became standalone, while the modders who made the original *Team Fortress* for *Quake* were hired to develop *Team Fortress Classic* as a *Half-Life* mod to show off its multiplayer potential. Then they made *Team Fortress 2*. Without that there would be no *Overwatch*, and no hero shooter genre.

And of course, there's the elephant in the room: *Counter-Strike*. Its creators, Minh 'Gooseman' Le and Jess Cliffe, were also hired by Valve and *Counter-Strike* became a series with its own esports league and an economy that puts small nations to shame. Without *Counter-Strike*, round-based modes where players work together in two squads to complete objectives doesn't become the default first-person shooter multiplayer mode, another game has to be the first to go in hard on recoil modelling, and 950,000 people have to find a new game to play.

This isn't the end of the story. Because while *Half-Life*'s influence is obvious once you start to look for it, its broader effect is invisible. It's there when Vincent Adinolfi, making his survival horror game – and every other designer tying narrative to level design – remembers how *Half-Life* handled environmental storytelling. Whenever someone thinks plot is more important in videogames than it is in porn, whenever they think that just because a game has guns doesn't mean it can't have a narrative, *Half-Life* is there. ■

TOP: Enemies fighting other enemies, something *Half-Life* borrowed from *Doom*.

ABOVE: Bad things happen to NPCs in vents.

On why people still care so much about *Half-Life* today:
"I read a lot of reviews, and I talk to a lot of people about what they like about the games, and when they describe them to me I feel like those types of things have been done again since. Is it perhaps that *Half-Life* and *Half-Life 2*, they introduced certain concepts to games pretty well? Like, the introduction of more interactive storytelling for *Half-Life*, perhaps we were laying the groundwork for that to be the norm in videogames to come."

On how well the game holds up these days:
"When I replayed it again, I was kind of blown away by the ambience that was created by the first half of the game. I think as you progress further in, you start to see like the game's age a little bit. But I definitely think that first third was very compelling."

BEIGE

is the new

BLACK

Rebuilding a 1998 rig just to play *Half-Life*.

By Phil Iwaniuk

Rebuilding a 1998 rig

It all started with Black Mesa. Firstly, because the stars aligned in Christmas 1998 such that my first taste of PC gaming happened to be *Half-Life*, the best shooter ever made. Santa Claus delivered a personal computer to our home that year – a Packard Bell Platinum 350, since you ask. A 350MHz Pentium II lay within it. A 3DFX Voodoo 2 with 8MB onboard memory. 16MB of RAM and 6GB of hard drive space. These were formidable gaming specs, and when I was given the luxury of choosing a new PC game to accompany it under the tree I relied on the wisdom of PC Gamer, who sure were keen on this *Half-Life* game. That Christmas was magical. But that's not the point.

I mean to say, it all started with *Black Mesa*, the Source Engine reworking of *Half-Life* by Crowbar Collective. When it appeared on my radar back in 2013 I thought it looked like the perfect way to experience the game I'd confidently been calling the best shooter ever made – having played it just once, aged 12 – once again. After more than 15 years of abstinence I'd once more allow myself to take in the giddy delights of creeping past the tentacle beast and watching Barneys plunge to their doom in broken elevators through the lens of this Source Engine remake.

I lasted about two minutes. That was all the time it took to realise that every slight deviation, every instance of minor creative licensing, was only going to wind me up. The Barneys all had different lines! The posters were slightly different! Some of the rooms were bigger/smaller than I remembered! This wouldn't do.

No, this wouldn't do at all. I made a very serious promise to myself that day, having closed down *Black Mesa* – which was perfectly good, by the way. The only way I'd play my darling *Half-Life* ever again was in situ: the original game disc I'd kept all these years, running on a Packard Bell Platinum 350. So began a painstaking and indefensibly self-indulgent quest to source nearly worthless PC parts.

The keyboard and mouse were surprisingly easy to get hold of. Having set up eBay alerts for every bit of Packard Bell minutiae I required, I was directed to the very same 'board, complete with redundant multimedia controls, going for a princely £10. It arrived shortly afterward, smelling faintly of *someone else's house* and, well, presumably working. I didn't have anything to

RIGHT: The off-white box that powered an all-time classic.

FAR RIGHT: I'm still searching for the screen. Can you help?

plug its PS/2 connector into to check. I opted for a Microsoft Intellimouse to pair it with because – and I'm ashamed to write this – I can't remember much about the original mouse that came with my first PC and I'm pretty certain we plumped for the Intellimouse quite quickly anyway. They're ten-a-penny on eBay too. Easy, this retro PC-sourcing lark.

RETRO FIT

The real difficulty began, funnily enough, when it came to finding a specific model of PC released 20 years ago in good working order. Retro gaming PCs are all the rage at the moment, and there's a growing cottage industry of PC builders who source old parts and practise the dark art of 'refurbishment' on them (in reality a can of compressed air and some homemade bleach solution to remove the yellowing on beige plastic). But what if you're not just looking for *a* retro gaming PC, but *the* retro gaming PC? After a year of eBay alerts and fortnightly searches, I hadn't come close. I was at such a low ebb that I considered hitting the 'Buy it Now' button on a Dell.

I also thought about building the machine by sourcing the individual parts, and I must now say in the strongest terms possible: don't do this. You've forgotten everything about hardware standards and compatibility from 20 years ago. You have no idea what chipset that motherboard you're looking at is, and there isn't a damn thing on the internet about it to inform you. No one will help you if that Voodoo 3 doesn't fit, and good luck getting all the right cables to connect your miraculously compatible components which you've implausibly found working drivers for. Honestly, forget it. Buy a prebuilt PC which the seller confirms is in full working order. If they include the original recovery disc, that's a massive bonus. You'll need to buy your old operating system of choice otherwise, and although Windows 98 isn't quite as expensive now (£15-£20 from most sellers), it's an added cost you might initially overlook. If you want, you can even refurbish an old machine yourself by buying a £5 can of air and following one of the many questionable recipes for 'Retrobright' solution to bleach parts back to factory fresh – just know that PC Gamer accepts no responsibility for you ruining your floors, bathtub, hands and PC parts.

It came as quite a surprise when my exact make and model of PC materialised on eBay after a full year without leads. I stared at each shaky smartphone photograph on the listing with an almost pornographic fascination, barely conceiving the needle I'd found in eBay's discarded goods haystack. The seller had listed it with a guide price of £400 to encourage private offers, and honestly I'd have paid it if it came to it. In the end, though, I sent an offer of £100 and spent the day worrying that I'd lowballed to such an insulting degree that my bridge with this seller was forever burned. He accepted it instantly, because you would, wouldn't you, if some weirdo came out of the woodwork desperate for your unwanted two-decades-old computer. Thanks again, sync_it, and sorry about deleting all your old *Champ Man 3* saves.

The fates had smiled on me. I'd secured some very specific pieces, and I hadn't even had to risk the one website that claimed to still be selling my original PC new, 20 years later. Still, two pieces still elude me: the Packard Bell Milano 17-inch CRT monitor, and the recovery disc. I'll keep searching, of course, but I was especially disappointed not to fully immerse myself into 1998-o-vision

IN WITH THE OLD

My shopping list

Packard Bell tower PC (PII 350, 16MB RAM, Voodoo 2) £100
Original keyboard £10
Microsoft Intellimouse £10
Windows 98 £12.99
6GB IDE hard drive £10

TOTAL £142.99

TOP: *Half-Life* is just as good as you remember. Confirmed.

with a CRT's characteristic display. Good CRTs are hard to find now – most have either been chucked, broken, or taken to recycling centres to fester away. Of those that appear on eBay, most predate my target Windows 98 era – there's high demand for Win95 screens and earlier, it seems. They're also heavy as all heck, which means delivery is a real issue – there are specialist couriers who deal with fragile items and know how to handle a CRT, however. Perhaps there's someone out there who's cared for a Milano monitor all these years, someone now ready to part with it. Until I find them, I must subject my retro rig to the indignity of outputting on a 32-inch IPS.

Never mind. The beating heart of the PC was just as it had been. Likewise my peripherals. What a perfect way to remind oneself what PC gaming was really, truly like 20 years ago. That's no small point – that era's been fetishised in recent years, evidenced by Kickstarter-funded odes to the Infinity Engine RPGs, and reboots of everything from *Thief* to *Outcast*. Not to mention *Black Mesa*, of course. What's clear when you press the power button on an old tower PC, hear the Windows 98 welcome chimes, and load a game's CD-ROM into the tray, is that we've forgotten much of the era's reality.

FIRST-PERSON SHOOTER CONTROL SCHEMES WERE THE WILD WEST IN 1998

For example: first-person shooter control schemes were the wild west in 1998. By default, *Half-Life*'s controls are bound to the arrow keys, of which left and right *turn*, rather than strafe. At least mouselook is enabled by default. *Quake II*, released just a year prior, maps the mouse to moving forwards, while A and Z control your vertical view. Barbaric.

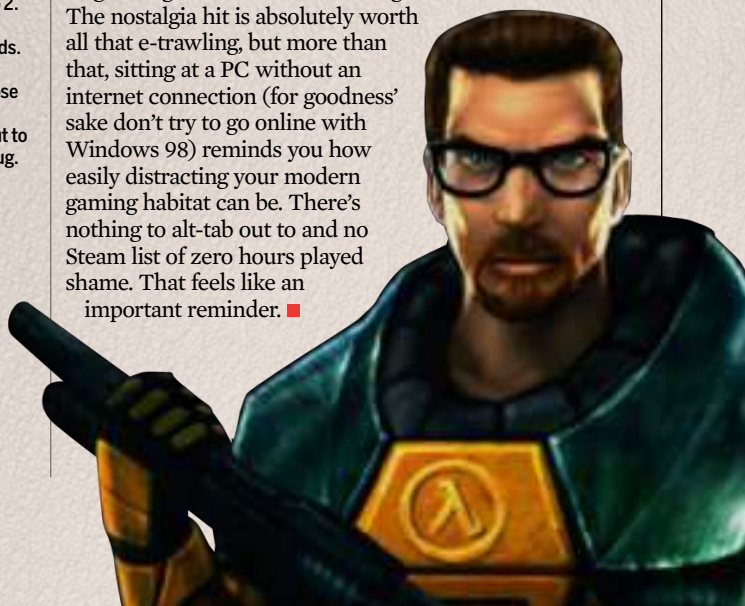
REVISIONIST HISTORY

On the technical side, we've forgotten much about what games looked like when they released – for most people, running on a software renderer in 640x480 and still not hitting anything like 60fps. The *Half-Life* you see in YouTube speedruns and let's plays, running at modern day resolutions, bears little resemblance to the one I lost myself in the Christmas it came out. That game is grainier, darker, and somehow more atmospheric for it. Although hundreds of shooters have since aped *Half-Life*'s setpieces, NPCs and storytelling techniques, Valve's vision stands as tall and impressive on this retro PC as it did on release. *Half-Life* was, and is, a place you go, rather than a game you play.

Perhaps the most profound realisation that comes from building an old PC and booting up a treasured memory is that I'd advocate every single PC gamer do the same thing. The nostalgia hit is absolutely worth all that e-trawling, but more than that, sitting at a PC without an internet connection (for goodness' sake don't try to go online with Windows 98) reminds you how easily distracting your modern gaming habitat can be. There's nothing to alt-tab out to and no Steam list of zero hours played shame. That feels like an important reminder. ■

TOP: The Voodoo 2. Rolls-Royce of pre-'00s AGP cards.

LEFT: Look at those subtle, sweeping lines, reaching out to your palm for a hug.



System Shock 2

SHODAN SHOWDOWN

Irrational Games co-founder Jonathan Chey on the difficult development of **SYSTEM SHOCK 2** – and how he's still finding new inspiration in it today.

By Alex Wiltshire

System Shock 2

For me, *System Shock 2* is one of the all-time greats. Tying together sharp storytelling, taut gunplay and RPG character development, all set on a claustrophobic spaceship that drips with horror-inflected tension, it was the gateway to the immersive sim classics to come, such as *BioShock*, *Dishonored* and *Prey*. For its makers, though, *System Shock 2* was a test.

It was the first project by a new studio called Irrational Games, a chance to prove it could deliver a game that matched the calibre of Looking Glass, the developer of the original *System Shock*, *Thief* and other PC classics. "It was probably the most pressure I've felt in my life," says Jonathan Chey, one of its three lead developers. "My strongest motivation was not wanting to look like a fool, because we'd never done anything like this before in our lives."

Now, over 20 years later, Chey can say the gamble worked. *System Shock 2*'s sci-fi horror adventure made Irrational Games' name, laying the foundation for a future in which it would make the likes of *SWAT 4*, *Freedom Force* and, of course, *BioShock*, and lately, Chey has found himself returning to it for inspiration. At the time, though, it didn't quite light up the charts. Sure, it was critically lauded, but for Chey and his fellow founders, Ken Levine and Rob Fermier, it was simply enough.

ORIGIN STORY

These three developers, two programmers and a writer met after joining Looking Glass, where Fermier had worked on the first *System Shock*.

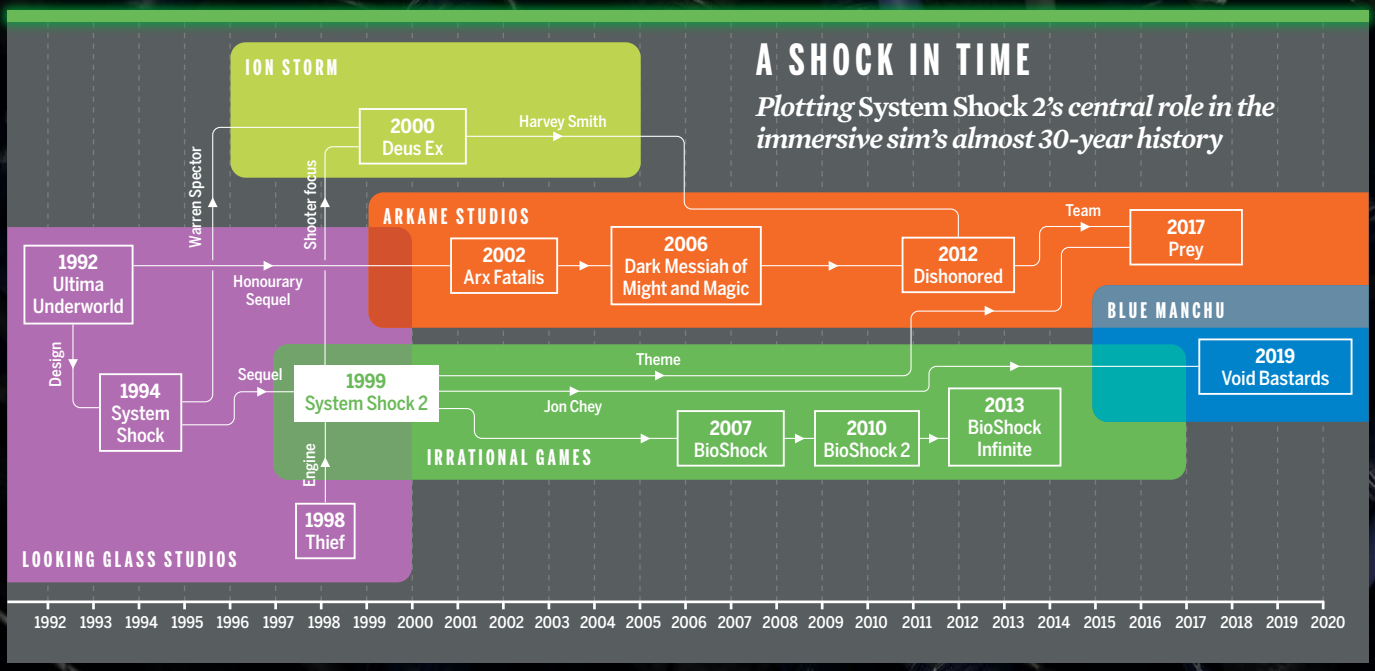
ABOVE: *System Shock 2*'s Von Braun is home to mechs as well as more biological enemies.

Ken Levine had contributed to *Thief: The Dark Project*'s initial story and design, while Chey programmed for *Thief* and *Flight Unlimited 2*. They were young and not terribly experienced, and they wanted to found their own company. But they had already learned something important from Looking Glass.

"They weren't a company that did small, highly polished products," says Chey. "They were a company that did vast, sprawling, ambitious things that always overreached. That's one of the things we really loved about their games, and we inherited that kind of ambition and way of working, which was to do things that were probably – well, definitely – well beyond what was realistically achievable with the

A SHOCK IN TIME

Plotting System Shock 2*'s central role in the immersive sim's almost 30-year history*



"THEY WERE A COMPANY THAT DID VAST, SPRAWLING, AMBITIOUS THINGS THAT ALWAYS OVERREACHED"

budget and time and personnel that were available. That's how we were taught to make games, and the only way we knew to make games."

They decided on a name (rejecting Chocolate Milk Productions and Underwater Horse) and scored a deal with French publisher Cyro to create a singleplayer campaign for an isometric action game called *FireTeam*. But they were left hanging when Cyro decided to make the game multiplayer-only. Fortunately, they'd stayed friends with their former employers, who rescued them with a huge opportunity: a sequel to *System Shock*, the already celebrated first-person sci-fi RPG which Looking Glass had released in 1994. "We were given an enormous amount of responsibility, and for not very good reasons," says Chey.

The team took a couple of rooms in Looking Glass' office, some staff, the Dark engine, which was still under development for *Thief*, and a meagre budget of $700,000. "The whole development process was us pulling ourselves up by our bootstraps, not a very big budget and trying to put together a team and run a project and do things we'd never done before," says Chey. "So most of the time we were just trying to stay afloat, and to come up with good ideas. We certainly didn't have expectations about producing something that people would really enjoy, though of course you're always hoping for the best."

CHARACTER-BUILDING

But the team worked well together, dividing up responsibilities so that Chey managed the project, Levine was in charge of design and story, and Fermier was in charge of technology. And they all agreed on a very clear vision for what they wanted to make: a worthy follow-up to the original *System Shock* but with a stronger story and a greater focus on character building and mechanical progression. "*System Shock* was maybe trying to be a bit cleverer than we were," says Chey. "It was trying to innovate on almost every front, whereas we kept a lot of the core principles, and then layered more conventional RPG systems on top."

TOP: Ah, the birth of dramatic irony through environmental design.

System Shock, after all, had transposed *Ultima Underworld*'s pioneering fully 3D first-person roleplaying to a sci-fi setting only a year after *Doom*'s release. Trapped on a space station which had been taken over by SHODAN, its now-homicidal AI, your task was to explore its tightly wound decks, fight cyborgs, solve puzzles and envelop yourself in cyberspace, in order to stop it firing a mining laser on Earth. There was a lot going on in *System Shock*. You could even play little games of *Pong* and *Missile Command* in its UI windows if you wanted.

But though it had evolved from an RPG, *System Shock* focused on action and gave little opportunity to develop your character. A door was left wide open for Irrational to build on it. "I guess we figured out a little earlier than some other people that it was very easy to add RPG mechanics to all kinds of existing game types, and that in doing so you made the game much richer," says Chey. And so in *System Shock 2* you level up your various skills – hacking, energy weapons, psionic powers – and attributes with the Cybernetic Modules you're rewarded with and find scattered around the decks of its setting, the science ship Von Braun. You find nanites, which are a currency for buying items from Replicators and paying for hacking into terminals and locked crates. You can also choose between some powerful O/S Upgrades.

These systems let you create with a good degree of freedom your own character build as you run through the Von Braun: do you want to be psi-powered adept, or a soldier? A hacker and repair expert? The multiple ways of facing the storyline's challenges prefigured the similar focus on stats and skills that came in *Deus Ex* in the following year.

"A LOT OF IT FELT VERY SIMILAR TO MAKE. I ENDED UP WRITING SOME OF THE SAME CODE I WROTE NEARLY 20 YEARS BEFORE"

ABOVE: *Void Bastards*, released in 2019, is Chey's most recent game, an indie shooter directly inspired by *System Shock 2*.

Although they were a big part of *System Shock 2*'s appeal to players, for Chey its RPG features were simply a product of the budget he had to work with. Having seen *Half-Life* release during development, he knew that they didn't have a chance of building a game with anything like the sophistication of its AI or its scripted in-engine narrative sequences. "We had to do things that were relatively cheap to implement," he says. "RPG mechanics are quite cheap to build and they're very satisfying."

Levine's story, meanwhile, would have to be told through emails and voice recordings, just as they were in the first *System Shock*. It's decidedly functional, but the way it's delivered within the fiction of the world gives immediacy to a tale in which SHODAN is now on your side – or so it appears – as you both battle a worse threat. As she snipes and chastises you for not performing her tasks fast enough, *System Shock 2* sets up a theme about player agency which Levine would go on to play with in the excellent *BioShock*.

RATION RATIONALE

System Shock 2 *was built around the idea that the player should always be hungry*

"It wasn't designed as a power fantasy game," says Chey. You spent the game always coveting a better weapon or upgrade. It feels great to play, but as with so much about *System Shock 2*, it was really about keeping things under budget. "It's quite easy to create a desire for stuff by rationing things rather than constantly giving the player shiny new toys. Every shiny new toy has to be developed to be exciting and interesting for the player. It's not going to be that cheap to make, probably."

AFTERSHOCK

But for all *System Shock 2*'s achievements and legacy, it was a stepping stone. Chey feels its sales potential was hampered by its budget, and the studio's fortunes were hindered by a deal they'd struck with Looking Glass which meant that even if it was a hit, Irrational wouldn't have made much money out of it. "God know what our royalty percentage was," says Chey. "I'm sure

it was tiny. We had no expectations of becoming rich. Our strategy was, 'Let's make a really great game to set us up as a developer that people would want to work with in the future and so we could cut a better deal for our next product.'"

Sure enough, the studio's next game – *Freedom Force*, which Chey directed – got a much bigger budget. "We were able to spend a bit more time and we weren't quite so much against the wall." And eventually, after *Tribes: Vengeance* and *SWAT 4*, they commanded enough money to make *BioShock*, which added big-budget presentation and sanded down some of *System Shock 2*'s rougher edges (inventory system, interface, weapon degradation).

"Some people, I'm sure, would think it was dumbing down the product, but I don't regard *BioShock* as dumbed-down. I regard it as a much more accessible version and, in fact, much smarter about a lot of things. There was a lot to learn from *System Shock 2*. We'd thrown a lot of things together very quickly and some of them worked really well, and some of them didn't." *BioShock* was the studio's first true hit.

ABOVE: *System Shock 2* ramps up the horror from the sinister threat of the original.

Chey left Irrational in 2009 and founded a new company called Blue Manchu. Its first game was something completely different, the excellent collectible card-cum-turn-based strategy game *Card Hunter*. But as he began to plan its second, Chey replayed *System Shock*. He found himself enjoying its combat and the way monsters roam the ship, but didn't like the way that there's little point in revisiting cleared areas of the ship. So at the core of *Void Bastards*, the roguelike first-person shooter his studio released in 2019, Chey is exploring *System Shock 2*'s combat more deeply, translating many of its simulation-based features, such as the way monsters respond to audio, lockable doors, and a wide toolset of weapons and traps, into endless procedurally built levels.

"A lot of it felt very similar to make," he says. "I ended up writing some of the same code I wrote nearly 20 years before." And he's been revisiting *System Shock 2* in another way, too. One of his favourite games of the past decade is *The Legend of Zelda: Breath of the Wild*, in which he can see echoes of the *System Shock* series in the way its systems interact, such as rolling physics balls down hills and using the Rune abilities. "I felt that the designers must have played some of the games we worked on, or the games that influenced us, and because I loved that game so much, that was a wonderful feeling. One of the [most] satisfying things about being a creative developer is feeling you're part of the ever-growing state of the art." ■

“I started to misremember it as dumb and lightweight”

The objectives are varied, and mostly enjoyable.

COMMAND & CONQUER: RED ALERT 2

A hell of a march through the USA. *By Phil Savage*

In 2008, when EA tried to resurrect the *Red Alert* series with *Red Alert 3*, its marketing focused on the tongue in cheek, deliberately ludicrous story. Trailers showed George Takei, Tim Curry and JK Simmons chewing the scenery of their respective Empire, Soviet and Allied war rooms. Official descriptions heralded the return of the "humour" and "popcorn style story". It's fitting that *Red Alert*, of all series, should be the subject of such revisionist history.

NEED TO KNOW

RELEASED
October 2000

DEVELOPER
Westwood Studios

PUBLISHER
EA

LINK
www.bit.ly/commconq

WELCOME BACK, COMRADE GENERAL *How to play on Windows 10*

"American OS weak like turtle without shell. To bring glory to Mother Russia, download Aqrit's ddwrapper from *www.bit.ly/ra2wrap*. Extract ddraw.dll and aqrit.cfg into *Red Alert 2* folder, then open aqrit.cfg in text editor and change 'ForceDirectDraw Emulation' from '0' to '1'. Save, and play." [Pokes turtle.]

The original *Red Alert* isn't a comedy. While it opens on Einstein travelling back in time to assassinate Hitler with a fatal handshake – and let's all take a second to think about that – the majority of its cutscenes are played straight. Its absurdities come through stilted acting, basic sets and questionable CGI. But the alt-history conflict between Allies and Soviets isn't portrayed as a fun, campy romp. *Red Alert* isn't a spin-off to *Command & Conquer*, but a prequel. The end of its Soviet campaign depicts the rise of Kane and the Brotherhood of Nod. In this light, it's not surprising that its tone would match the more consistently serious main series.

It was *Red Alert 2*, released in 2000 – a couple of years after *C&C* sequel *Tiberian Sun* – that changed the mood and overarching story, ditching all ties to the *Tiberian* series in favour of a second war between the Soviets and Allies. Little attempt is made to dramatise events. In the first briefing of the Soviet campaign, Premier Romanov pokes a turtle named Uncle Sam as part of an extended metaphor about America being weak and cowardly. US President Dugan – played by Twin Peaks' Ray Wise – is nervous and petulant throughout. The Soviet invasion itself is triggered when a psychic with a head tattoo mind-controls a soldier through a telephone. It's all very silly.

Command & Conquer: Red Alert 2

The British can train a powerful sniper.

Bases look pretty nice before the tanks arrive.

It's like a sightseeing tour, but with armies.

Played today, this tonal shift stops *Red Alert 2* from feeling overly dated. The obvious comparison is to *Tiberian Sun*, which even James Earl Jones can't save from an awkward mix of drama, action and scantily clad mutant sidekicks. I don't remember *Tiberian Sun* being quite so embarrassing at the time, probably because I was 14. Now it's hard not to cringe through the cutscenes. *Red Alert 2* avoids that fate because you can tell its cast are having fun. It's a knowing nod to the camera; an admission that yes, it's a new millennium and we're still doing FMV. Importantly, though, it's not ironic. It embraces the awkwardness. It owns it.

Despite this, *Red Alert 2*'s reinvention was likely a consequence of internal drama. Many Westwood developers left after EA purchased the studio, likely necessitating a much more different sequel than was ever planned. Certainly the loose story threads of the first *Red Alert* are left dangling. Is it stupid to expect continuity from a series featuring time travel? Maybe, but *Red Alert 2* doesn't even try. It would have been easy enough to write in some brief, ridiculous-sounding time shenanigans to explain the new timeline. Instead, we go straight to the buffoonery and mind control.

COMMANDER CONQUERED

EA's acquisition and eventual destruction of Westwood is still a sore point among fans, and for good reason. But *Red Alert 2* finds itself in the sweet spot of the studio's troubled history. Those staff who left likely wouldn't agree, but the proof is in the product. This is one of Westwood's finest – a brilliant balance of fast action, inventive design and streamlined strategy. Its campaigns are memorable, and buoyed by the focus on familiar US landmarks. *Red Alert 2* also improves and polishes *C&C*'s major systems far more than any of its predecessors. For all of *Tiberian Sun*'s visual and engine improvements, many of its planned features were scrapped – another consequence of EA's purchase, and the pressure for an earlier than planned release.

Not that any of *Red Alert 2*'s new features make a huge difference to

OUT OF CONTROL *How the C&C games fit together*

The Soviets believe in quantity over quality.

IS IT STUPID TO EXPECT CONTINUITY FROM A SERIES FEATURING TIME TRAVEL?

the strategy. Garrisoning troops is a nice addition, but of limited use in a series that's more about production than micromanagement. And while capturing neutral tech buildings can grant useful bonuses, none of their rewards are so major that it's worth expending serious effort or resources to secure them.

It's the more subtle tweaks and additions that make *Red Alert 2* superior to *Tiberian Sun*. By organising the production sidebar into tabs, it becomes easier to find specific units and buildings – thus easier to react to the current situation. In fact, skirmishes as a whole feel more streamlined. *Tiberian Sun* doesn't have more units in total, but the greater focus on ground combat leads to an unnecessary level of obfuscation. Its units are all different, but rarely so different that they'd each form the cornerstone of a distinctive strategy.

Red Alert 2 has naval construction, and so spreads out its units over land, sea and air. As such, the battlefield feels cleaner, but also more varied.

As in any RTS, both sides have different units and buildings. But *RA2* feels like it embraces each faction's differences more completely than previous *Command & Conquer* games. Even the respective resource harvesters are different. The Soviet one has a mounted machine gun, finally giving the vehicle a defensive measure more effective than trying to squash soldiers under the wheels. The Allied one can teleport back to its refinery, shortening the amount of time it spends on the move. Both are interesting tweaks to an otherwise boring unit, and feel in keeping with the personality of each side.

SQUIDS IN

Somewhere in the mix of units – the unhinged Soviet explosive experts, the lightning troopers, the dolphins and squids, the teleporting legionnaires who delete things from time – *Red Alert 2* feels more like a cartoon than its predecessor. The tonal shift works for the mission briefings, but, looking at it now, not so much on the battlefield. The first game felt bleak, conveying a sense of realism that hammered home the power and devastation of its weapons. The Tesla Coil was cool precisely because it felt so ominous and terrifying. But *Red Alert 2* is a fun romp, and so the destruction wrought by its superweapons feels ultimately less powerful.

That aside, I find myself surprised by how much I still enjoy *Red Alert*. In recent years I started to suspect that the *Command & Conquer* series wasn't as good as fans – myself included – made out. I started to misremember it as dumb and lightweight, devoid of any real strategy. That's not the case at all, despite the focus on speed and action. This is still a legitimately good RTS, filled with interesting and enjoyable decisions. Yes, it also lets you build a shitload of tanks, but that just speaks to the diversity of approach it offers.

I shouldn't be so surprised. After all, *Red Alert 2*'s lead designer was Dustin Browder, who would go on to lead *StarCraft II*'s development team. This remains a fine product from a fantastic era of RTS design. ■

The Sims

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LIFE

Six stories of how THE SIMS changed PC gaming for everyone.

EXTENDED FAMILY

The Sims 2 as an extension of an already-embarrassing teen existence.

By Keza MacDonald

There are two types of *Sims* players: the ones who create maniacal fantasies, in which hapless, interchangeable Sims are mere pawns in their sadistic games involving swimming pools and deleted ladders, and those who painstakingly recreate people and situations from real life and then run bizarre social experiments with them. As a teen playing *The Sims 2*, I was the latter.

I'd discovered *The Sims* on a friend's mum's PC a few years previously, whilst staying up late into the night on a sleepover, prodding little computer people who couldn't ever seem to figure out how to use a dishwasher without help. But those early Sims were pixelly automatons. *The Sims 2* had the character creator of my dreams. Instead of prefab faces with Lego haircuts, it had nose-length sliders and colour wheels and personality traits. My first few afternoons with the game were entirely spent within the Create-A-Sim menus, painstakingly recreating pretty much everyone I knew with unerring accuracy. (I still have a bit of a talent with character creators. Give me 20 minutes and I'll do you one kickass Mii.)

...but there were none on my ancient storage hard drive...

Naturally, the next thing I did was take my tiny digital versions of family, friends, my then-boyfriend and his parents, and make them all live together in a massive house that I built with infinite-money cheats, to see what would happen. (Actually that's not true. The first thing I did was create a virtual David Boreanaz and Sarah Michelle Gellar and force them into a one-bedroom flat in the hopes of creating my own interactive Buffy the Vampire Slayer fan-fiction, but if I talk any more about that I will die of embarrassment.)

I tried hard to find screenshots from my teen *Sims 2* experiments...

GENERATION GAME

So, there I was, in the utility cupboard that for some reason housed our family PC (why were PCs always kept in cupboards in the '90s/early '00s?), watching a tiny on-screen version of my boyfriend's dad pretend to paddle a bathtub like a canoe as the *Sims*-clone of my brother looked on in bemusement.

At this moment my actual, flesh-and-blood dad walked in, presumably to turn the central heating down, as all Scottish dads are constantly doing. I turned around to see him staring at the little virtual versions of himself and all his loved ones, their smiling headshots and happiness meters lining the edges of the screen, an expression of horror spreading across his face.

"What... what are you doing?!" he asked. I had no answer. I just sort of

...and obviously that PC has since become landfill...

sat there with my mouth open until he backed out of the room.

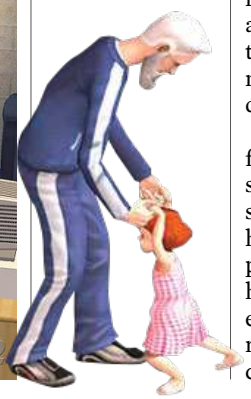
My poor, freaked-out dad. This must have been like his own personal episode of Black Mirror.

What could I have said? "Don't worry, Dad, I'm only creating virtual robot-versions of you without consent and messing with them to see what will happen."

It was never mentioned again, but he couldn't quite look me in the eye for several days afterwards. He was right to be disturbed, thinking about it. There is something deeply megalomaniacal about *The Sims*. It feeds every human's innate god complex, enables extreme control-freakery, and lets you manipulate tiny people for entertainment. This is one of the reasons for its extreme popularity, but another is that it's also a powerful engine for wish-fulfilment. The difference between *The Sims* and other videogames is that the fantasies it offers are almost charmingly mundane: get your dream job, find someone to love, make a bit of money, own a pretty nice house, start a family. The irony is that for the generation that were teens during peak *Sims* mania, half of these very ordinary aspirations now feel borderline unachievable in real life.

THERE IS SOMETHING DEEPLY MEGALOMANIACAL ABOUT THE SIMS

...It was pre-Facebook and Google Photos, obviously.



TEENAGE KICKS

As an adolescent I spent a lot of time thinking about what my future might look like. Over the two years I spent playing *The Sims 2* on and off, as well as building a lot of houses, downloading a couple of nudity mods and throwing a lot of awkward parties where *Sims*-versions of my friends unexpectedly got off with each other, I tried out different looks, careers and romances, friendships and personality traits.

Teens are so famously self-obsessed because those years are when you're forming your identity. As well as offering a distraction from real life, *The Sims* lets you think about real life, if you want to. Within the confines of its little consumerist micro-world, it lets you try on different futures (or presents).

Under my careful guidance, my first *Sims*-me became a rich mad scientist in a castle-like house with six redheaded children. She died happy after an unnaturally long life prolonged by a Fountain of Youth in her untidy garden. Sadly I can't exactly say I'm on the same path in real life. For one thing, so far my children are blonde.

OOH BE GAH

How to speak like the Sims.

By Alysia Judge

The last time you stubbed your toe, hopped on one foot, and cursed in a series of wordless noises – "mmmmnaaargh ow umph!" – you were speaking Simlish. The exact collection of strangled vowels that echoed down your hallway probably haven't yet been heard in a *Sims* game, but their emotional delivery is the core tenant of speaking *The Sims*' iconic language fluently. Here, anguish communicated more than "I banged my foot" ever could. Feeling is more important than phonology in Simlish.

Emotion is the answer to a problem that had developers scratching their heads in 1996. Sims needed to communicate with one another realistically – it's a life simulator after all – but using English would become repetitive and literally put words into the mouths of characters whose story belonged to the player.

"We went with Simlish to solve the creative problem of the user-created story," explains Robi Kauker, audio director for *The Sims*. "Simlish gives an emotional context to what is happening in game without interjecting specific meaning. So when two Sims have a conversation, it is up to the player to decide if it is about the weather, or an affair between neighbours, or anything else."

IN SOME GAMES LIKE THE SIMS, PLAYERS TAKE AN ACTIVE ROLE IN WORLD BUILDING

Game of Thrones, Lord of the Rings, and other fantasy dramas invented fictional languages that are spoken in real life as fluently as French. The grammatical richness of Elvish and Dothraki make Middle Earth and Essos seem more real, but it's rare to find the same level of linguistic minutiae in videogames.

For Kauker, that's partly because in some games like *The Sims*, players take an active role in worldbuilding, which requires a more laissez-faire approach from developers.

"[TV, film and books] all have a properly defined story," he says. "It would be wrong for the creators not to define the language ... in *The Sims*, the game gives that creative role to the player. The player develops the stories and truths about their world with the game."

Artists have recorded their own songs in Simlish.

So if you want to speak Simlish fluently, you'll have to be imaginative. Kauker and the team have invented under 200 words that loosely mean something, but they're never used in exactly the same scenarios.

For example, 'nooboo' means 'baby', but the word could be heard while a Sim holds a child, tells an age, notes another Sim's behaviour, or points to a crib. So nooboo isn't so much the word for baby, but the sound attached to the practical, cultural and social realities of youth. This leaves room to improvise around words, and invent new sounds that fit a given situation.

The best example of real-world Simlish speakers are found in the singers who translate their songs to be used in-game. Paramore, Jason Derulo and My Chemical Romance have all recorded full tracks using the developers' linguistic guidelines but with the freedom to mould the language as they see fit.

So, for example, Katy Perry's lyric "Cause you're hot then you're cold" became "ka vahap ni nap col", while "you're yes then you're no" translates to "fa hit tinap blow".

Bark!

Probably best we don't translate this one.

"Occasionally we get some unbelievable performances," says Kauker. "It's almost like not having the words causes the singer to put more energy into the vocal emotion to get the message across – at least that is my theory."

SMOOSHIBE SUL SUL

Simlish is new 25 years old and still evolving. In 1996 every Sim's expression was obvious to the point of slapstick, but with each sequel and expansion pack comes more nuance and complexity. Each successive voice actor has been given the freedom to express their own take on the situations they're bringing to life, meaning Simlish now has a large toolkit of emotional expressions that are mostly individual to the voices behind them.

Kauker, for his part, has a few favourite expressions, "Having just finished *The Sims 4: Island Living* and with summertime here, it's got to be 'Smooshibe', which kinda translates to all things sunshine related. And there is always 'Sul Sul' which is kind of a greeting sort of in the style of aloha."

Traditional linguists might find Simlish's paucity of grammar frustrating, but Kauker's team mirrors a modern approach to language that abandons the rulebook. Today's millennial culture has broken down and reshaped English to be as expressive in written form as it is in spoken. Body language, tone, and volume of voice is now conveyed online with atypical use of capitalisation, spelling and acronyms. For instance, a total absence of punctuation is used on social media to express unfettered excitement, and to mimic the way someone speaks when they are too agitated to take a breath in conversation.

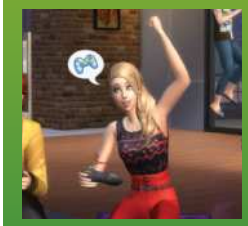
This contemporary focus on reshaping written language to mirror emotion is identical to *The Sims*' approach. "Simlish is just a commitment to communication via emotional expression," says Kauker. "If you can be honest with that then making the 'words' is fun and easy."

KEY WORDS *Your essential Simlish phrases*

"Om za gleb!"
– Oh my gosh!

"Vens unch?"
– When's lunch?

"Ongie"
– Selfie



"Yibs / Yibbsy"
– Yes

"Arogoba"
– Good bye

"Yib-Sim"
– Best friend

TAKE PRIDE

How *The Sims* has spearheaded queer representation in gaming.

By Natalie Flores

When I first played *The Sims* as a little girl, I found it odd that I could have relationships with men and women. It would be many years before I realised that this isn't just normal – it's also my normal.

Now that I'm older and have come into my own as a bisexual woman, I've realised the profound impact *The Sims* had on me through its depiction of queerness as natural in the face of a society that once largely found it radical. For the last two decades, *The Sims* has spearheaded queer representation in gaming. The freedom it's long offered in letting players romance, woohoo, and marry whomever they wish regardless of gender – to be who they truly want to be without limitations – has been so valuable to my exploration of my identity, as it has been for many others.

LEARNING

There's little mystique found in *The Sims* – things can and often do get silly, but its core is grounded in reality. You create and control characters who get jobs, form relationships and raise families.

It's this mundanity that helped a player named Mark find themselves. They initially dismissed their preference of controlling female Sims as doing what they couldn't do in real life – in this case, be a girl – because it was a videogame. "By the time I was mature enough to even attempt to try to figure out my identity, I had realised that playing as feminine and especially androgynous characters was more appealing," says Mark. They grew to see it more "as an aspirational goal than ... a novelty" which proved easy "in a game about just ... living, without having to lead a gang or battle aliens".

> **"THROUGHOUT MY CHILDHOOD, I HAD A POSITIVE SPACE ON MY COMPUTER"**

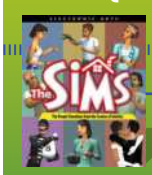
The realism was also crucial for a player named Lily in coming to terms with being trans. She says the character creator is one of the few "where the clothing options are both realistic – not fantasy armour or military gear – and varied". This has allowed her to spend hours trying clothes on her Sim, expressing herself in ways she hasn't been able to in real life.

HEALING

Using *The Sims* as a playground for experimenting has been integral to games journalist Rebekah Valentine's healing process following a break-up. Before it happened (though unrelated to it), she began thinking she might be bisexual. While she's still coming to terms with her bisexuality and doesn't want to date yet, she says it's been immensely helpful to live through her Sim "to explore what my ... 'ideal' life would be like if I didn't have fears and anxieties and worries about everything from money to sexuality to whatever else".

For Mollie Faux-Wilkins, otherwise known as TheEnglishSimmer on YouTube, seeing herself in her Sims let her feel like her queerness was just an ordinary part of her rather than a big discovery. "Before I even suspected that I might not be straight and throughout my childhood, I had a positive space on my computer

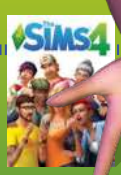
LGBTQ+ *A timeline of queer inclusivity in* The Sims



SIMS
2000
Same-sex couples can move in together and adopt a child.

SIMS 2
2004
Same-sex couples have a 'Joined Union' identical to marriage bar terminology.

SIMS 3
2009
All couples can marry, regardless of their gender.



SIMS 4
2014
Gender-neutral bathrooms, first game to include LGBTQ+ NPC families and a non-binary Sim.

Parenthood is an ordeal for any couple.

Since *The Sims 3* you can marry anyone, regardless of gender.

where my Sims could have feelings for any gender, and that normalisation felt like it played a major role in my coming out."

She's made a point of creating queer content, which matters given her visibility as one of the largest figures in the community. She's driven by "the viewers who [have] needed to find it and ... desperately wanted to see themselves or their friends in the media, be it a videogame, TV or books".

While *The Sims* has been wonderfully inclusive with its options – you can pick a Sim's physical frame, clothing preference, whether they can become pregnant, and whether they can use the toilet standing – there's always room for improvement. Faux-Wilkins and her community have already discussed how the series can keep leading the charge on queer representation.

One way is the implementation of a third non-binary option to the Create-A-Sim tool and they/them pronouns in the game's notification system. Faux-Wilkins adds, "Opening up that conversation made me realise that not all languages in the world have gender neutral pronouns ... That's why I think starting these conversations are so important."

Electronic Arts has recently revealed a new partnership with the It Gets Better Project to include LGBTQ+ Pride items in *The Sims 4*. And, with the help of more queer-affirming media like *The Sims*, it truly does get better.

Mulder and Daenerys: the ultimate crossover?

REMAKING CANON

Making your favourites kiss in *The Sims 2*.

By Aimee Hart

"If you don't like it, why don't you make something else that you do like?" is one of those questions that many inside fandom spaces have heard, especially when directed towards minorities, and will continue to hear probably until the end of time. It's a crappy retort that, at its heart, pushes aside real, troubling issues in favour of the artist's vision.

My favourite character in The Walking Dead, Andrea, met a grisly end in the third season finale. So, like any other reasonable person, I decided I was going to change the ending completely. Not by petitioning a complete rewrite of the season, I'll leave that to Game of Thrones fans, but by making a new one by myself in *The Sims 2*.

As I found out, I wasn't the only one who handled my love for a certain media turning sour by turning to *The Sims*, specifically *The Sims 2*. There were others like Shannon, who told me they used the game in order to change what had occurred in media that they liked. These weren't just changes like "I didn't like the ending of a show", sometimes, they were to rewrite aspects that they felt were completely negligent to the media's minority audience.

One example she gave me was when the show The 100 killed off one of its major LGBTQ+ characters, Lexa, back in 2016. There was a huge protest at the time, with many fans feeling as though they had been finally given the climax of a loving

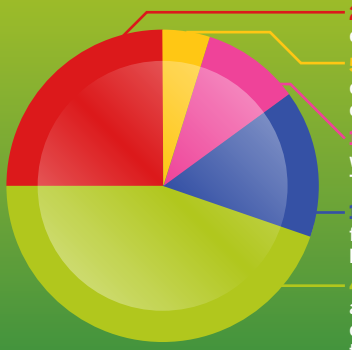
Failed at romance in *The Witcher*? Try again.

image credit: charlotkas-simblr.tumblr.com

Dana Scully, enjoying some downtime.

WHY YOU PLAY

Reasons for The Sims' success


25% I want to recreate everyone I know.
5% To see if I can create the ugliest creature known to man.
10% To right the wrongs of my favourite TV show.
15% My two favourite fictional characters will kiss goddamnit.
45% So I can finally achieve my dream of being stable in this economy.

relationship between Lexa and the protagonist, Clarke, only to have her brutally killed off by a stray bullet.

REBOOT

While other fans were doing petitions and asking that LGBTQ+ audiences and characters be taken more seriously, Shannon chose to act in her own way.

"Lexa and Clarke... I loved them a lot, and I still do," she says. "When [Lexa] died I just knew I had to go back onto *The Sims 2* and make some changes. I couldn't let the relationship that helped me come out to my friends and family just fizzle out like that. It was just too personal, too raw."

THEY STARTED AS ROOMMATES, BUT WITH DIFFERENT JOBS

So the first thing Shannon did was download mods of the two characters, throwing them into a world that was very different from their apocalyptic beginnings. They started as roommates, but with different jobs that kept them separate. Clarke was a burglar that worked nights, while Lexa was an actress.

There are impressive recreations to be found.

Image credit: charlotteasimbl.tumblr.com

"At first they rarely talked to one another. Their jobs kept them apart, kind of like in the TV show. But over time the slow-burn blossomed into a romance that left them with two kids and a dog and cat. So I'd say it was worth it."

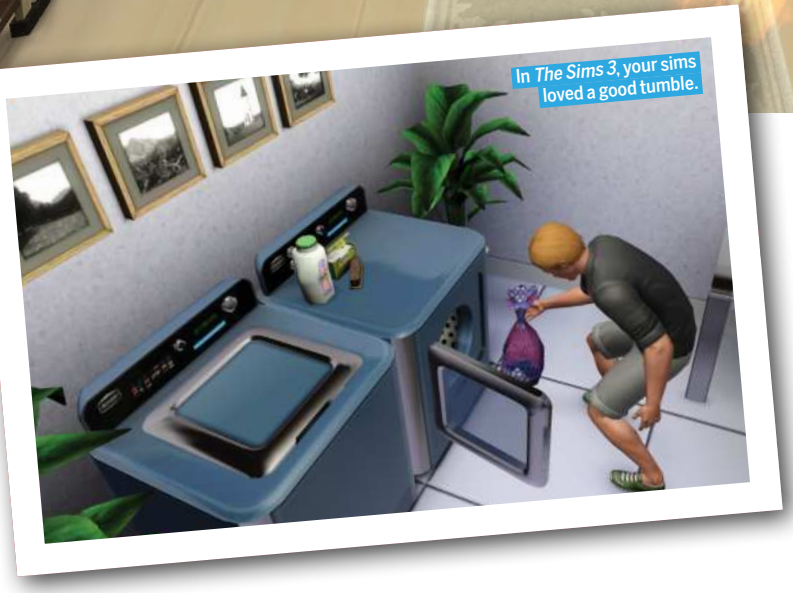
As for why she picked *The Sims 2* despite *3* and *4* being available, Shannon added that, "I'd grown up with the game, and I knew my way around the modding community for that game a lot more than I did with the others. I guess it was also because I was nostalgic and felt that, after so many years of not playing, I could play the game without having to relearn everything."

Another player, Olka, told me that their use of the game was a much more immersive experience about getting to control their favourite characters. It also had something to do with being able to log onto Sims Resources and download mods for what they wanted rather than waste time.

"I always preferred to use characters I enjoyed until, later down the line, I started to include characters that I'd made up myself when I was older." Olka later added that sometimes it was the mundanity of their favourite characters making something as simple as mac and cheese, where canon and plot twists and awful events couldn't touch them, that made playing so satisfying.

The Sims can easily be considered utopian, but the reasons why have always varied. For Shannon and Olka, *The Sims* can help "right the wrongs" of their favourite media, channelling their emotions into a world they can change for the better. It may not change what happened in canon, but it can allow fans to take control in cathartic ways. Game of Thrones fans, take note.

This is the danger we face every day.



In *The Sims 3*, your sims loved a good tumble.

LAUNDRY MACHINES

The Sims 3 vs *The Sims 4*

THE SIMS 3	THE SIMS 4
Non-stackable	Stackable
Four machines	One machine
No old-timey washtub	Old-timey washtub
Three hampers	Three hampers
Clothesline	Clothesline
No dryer lint	Dryer lint
Can't set dryer on fire	Can set dryer on fire

Relatable AF.

LAUNDRY LOVE

Laundry was the best and worst thing to happen to *The Sims*.

By Joanna Nelius

One of the most charming aspects about *The Sims* is that it sometimes falls just short of reality. Take having kids in the first game. Instead of showing the mother's pregnancy, a cloud of daisies will flutter around in the air and 'give birth' to a baby in a bassinet. But *The Sims* is much more accurate to real life now in many ways other than having children. You can go to college, run your own restaurant, and do laundry – which is equally the worst and best thing to happen to *The Sims*.

The ability to wash and dry your Sims' clothing first appeared with *The Sims 3*'s *Ambitions* expansion pack. It included a few different washing machines, dryers and the option to dry clothing on a clothesline, which gives bonuses to eco-friendly Sims for saving energy. Laundry was so popular after its introduction in *The Sims 3* that many fans complained for years about its absence in *The Sims 4* before it was eventually added through its own Stuff Pack. The most endearing quality of laundry is that it makes a household feel more complete – and by complete, I mean you feel your Sims' hatred for laundry as much as your own. Especially in *Sims 4*. (*Sims 3* Sims will jump at the chance to do laundry. The weirdos.)

Dirty clothes automatically get thrown into a nearby hamper when your Sim gets changed, but you need to get your Sims to move those dirty clothes to the washing machine. If any Sims in your household have the 'neat' trait, they might do it on their own if the hamper is overflowing, or the maid will do it for them if your Sims family is rich enough to afford a daily cleaning service – but not even the hired help wants to do laundry.

SIMS 3 SIMS WILL JUMP AT THE CHANCE TO DO LAUNDRY. THE WEIRDOS

In both *The Sims 3* and *The Sims 4*, the maid will often wait until the laundry baskets are full before they even attempt to do the most hated chore on the planet.

If they somehow muster up enough motivation, they'll gather the clothes out of one basket, put them in the washer, and then end their work shift, leaving the family to deal with the rest while still collecting their full fee for the day.

Laundry also introduced brand new ways to make your Sims miserable – and kill them. Cheap washing machines break and soak your Sim in dirty water, leaving them in a salty mood for hours. Dryers break too, forcing your Sims to use their nonexistent handiness skills and risk electrocution. *The Sims 4* added an extra step to doing laundry – cleaning out the dryer's lint. If you let it build up, it's guaranteed your Sim will start a house fire and possibly die in the process – but if you're the kind of person who likes to kill your Sims on purpose, this is an easier method than waiting for one of them to set the kitchen on fire.

SIMPLE MINDED

While those quirks of doing laundry are still charming, the mechanics of it defy logic. *The Sims 4* requires the player to physically click on each laundry basket in turn if they want their Sim to collect all of the laundry for a single load.

Sims 3 Sims do collect the dirty laundry from all the baskets on their own, but they create more work for themselves by collecting it in the most inefficient way possible. They'll get laundry from one hamper on the second floor, then walk downstairs to the hamper in the second bathroom, then walk back upstairs to the kids' room, then walk downstairs to the laundry room and throw everything in the wash while forgetting about yet another hamper full of stinky clothes hidden in some other room. Or sometimes they'll say 'screw it' and just drop the laundry right in front of the washer and then go into the other room to play videogames.

Doing laundry in *The Sims* is entirely optional, of course. But you'll miss out on the worst-best qualities it adds to the game – and all that adorable laundry room decor.

How's this for escapism?

Work might not be scintillating, but it is satisfying.

LICENCE TO BILL

Stuff, not stories, forms the real heart of *The Sims* series.

By Emma Davies

I've watched enough episodes of Eastenders to know how I should want life among my Sims families to go down. Sarah ought to be boffing Kenneth from across the street behind her husband Jim-Bob's back. Their grade-school daughter Katie should be bullying every nerd in the playground, while her teenage brother Miles acts as a secret criminal mastermind plotting the downfall of poor, hapless Kenneth's unsuspecting family. Every dinner-table conversation should be fraught with tension and the possibility that, at any moment, a plate of food could end up flying at the wall.

It's up to me to bring these webs of intrigue to life. But, let's be honest, that's not how I *really* play *The Sims*.

You don't even need to scratch the surface of the franchise to realise what these games are about – possessions, and the relentless accumulation thereof. These are simulations of nothing so much as the endless cycle of capitalism. What do we want? The biggest, nicest house in the neighbourhood! When do we want it? As soon as we've chip-chip-chipped away at our career paths to cobble together the requisite savings, even if it's a project that consumes multiple generations!

And, lest we forget, this is a franchise that's always been all about the add-ons. Ever since the original Livin' Large content pack, EA has pumped out expansions like there's no tomorrow – there's nothing like the prospect of more items to spend on in-game to keep fans splashing that real-life cash.

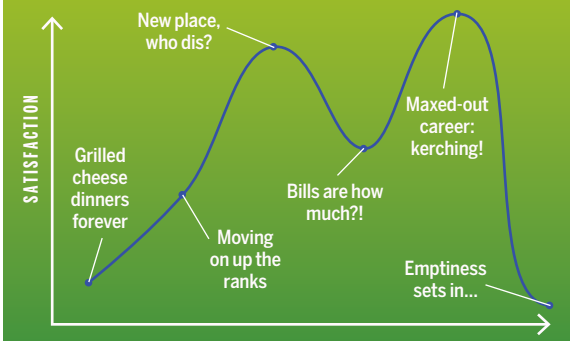
We all think back fondly to that heart-shaped bed from the Hot Date pack... er, right?

This is the face of contentment.

Alas, wealth does not guarantee good taste.

PRICE TAG

The true cost of retail therapy



The internet is a goldmine of players eagerly showing off their latest builds, fully furnished with every mod con you can imagine – and some you've not even dreamed of. From dollhouses to McMansions, they're proudly displayed in galleries more meticulously curated than an influencer's Instagram grid. Whether forged from the hands of a virtual god in build mode or funded through the get-rich-quick scheme of cheat codes, they've certainly spared no expense.

SHE JUST FELT A BIT SAD THAT THIS LUXURY EXISTED, BUT SHE DIDN'T OWN IT

And how's a Sim to get there? As Angelica Schuyler said – work!

Perhaps it comes of having a type-A personality, but I can think of no greater satisfaction than starting a new family with nothing more than the base allocation of 20,000 simoleons and a budget-friendly house, getting them all jobs, and hacking through to the top of their careers, upgrading their lifestyle bit by bit along the way. Yup. That's the good stuff right there.

This is not the house that slacking built.

If you're using a Sim's spare time or vacation days for relaxing, you're doing it wrong. Forget family bonding, it's a prime opportunity for building their skills.

Why go to a bar when you could play chess at home to work on your logic and inch closer to another rung on the ladder? That'll win you a fat cash bonus, which you can spend on your own goddamn bar to put in the corner of the lounge. Priorities!

LATE STAGE CAPITALISM

Ignoring all potential avenues for interpersonal drama in favour of the compelling lure of filthy lucre can lead to grinding harder in *The Sims* than you do in your actual, real-life job. Let's not kid ourselves that this is anything approaching escapism. But I like to give my people what they want, one recently developed a desire to build a swimming pool, for example. Did she harbour a particular yen for butterfly stroke? Nope, she just felt a bit sad that this luxury existed, but she didn't own it. Who can fail to identify with that?

Even once your Sims are ensconced in their Kevin McCloud-worthy dream home, surrounded by all the gilded possessions their hearts could desire, it's an unfortunate case of mo' money, mo' problems.

Those hefty bills don't pay themselves, you know, and lifestyle creep is real. Back to work Jim-Bob, you can't just relax now!

I'm not immune to the fundamental irony at play here, of course – my Sims spend their lives keeping up with the Joneses, except they don't even know what life is like for the Jones household. They've never had time to visit – not when there's work to be done, a promotion to be won and a new whirlpool bath to be purchased.

There are countless ways to infiltrate Liberty Island.

DEUS EX

Revisiting Ion Storm's cyberpunk RPG. *By Andy Kelly*

In the earliest *Deus Ex* design document, written three years before the game was released in 2000, Ion Storm established the philosophy of their ambitious cyberpunk RPG. "The key to role-playing is giving players the freedom to act as they see fit," it reads. "And a deep world simulation that allows them to solve problems in a variety of ways is the best way to do this."

And that's the core of what makes *Deus Ex* a PC classic. The sheer breadth of its systems and the complexity of its level design is unmatched, even today. A lot of things were cut from that document – including a level set on a space station – but Warren Spector and his team's original vision of a deep, rewarding RPG set in a rich, simulated world remained intact throughout development.

When *Deus Ex* was being developed, The X-Files was deep into its fourth season. And Chris Carter's cult show is an obvious influence on the game, with its government conspiracies, shadowy secret organisations, men in black and bug-eyed aliens. The design document confirms this, describing the story as "leavened by its dark, mysterious, conspiratorial tone" and any tinfoil hat conspiracy theory you can think of, from Area 51 to the Bilderberg Group, factors into the story in some way. It's a world where paranoia about ancient secret societies pulling the strings of government is entirely justified.

In the 'high concept' section of the design document, Ion Storm asks: "Is it better to live free in a world of chaos or live safely in an ordered world of someone else's design?" And that's one of the major themes in the sprawling, labyrinthine story. You play as JC Denton, a government agent enhanced with augmentations that grant him superhuman powers.

When the game begins he's employed by a branch of the United Nations created in response to the growing threat of international terrorism. But after learning that his bosses have ties to a sinister Illuminati plot, he joins his brother Paul in the resistance against them. "*Deus Ex* plugs into two popular fantasies," reads the document. "The millennial madness that's gripping the world, exemplified by The X-Files and a general fascination with conspiracy theories. And the desire to play with high-tech espionage toys."

NEED TO KNOW

RELEASED 2000	**DEVELOPER** Ion Storm
PUBLISHER Eidos Interactive	**LINK** www.deusex.com

These creepy agents explode when killed.

NPCs will reveal secrets and alternate paths.

You can kill Leo Gold, but your bosses won't appreciate it.

AROUND THE WORLD *Key locations in* Deus Ex

1 NEW YORK CITY
Plagued by a mystery virus called the Grey Death and deadly street drug Zyme, this future New York is a bleak, dangerous place.

2 PARIS
The French capital is the base of Silhouette, a terrorist group with ties to the Illuminati, and is patrolled by Majestic 12 troops.

3 VANDENBERG AIR FORCE BASE
This base is the HQ of X-51, an MJ12 splinter group who disagreed with their shadowy plans for the world.

4 HONG KONG
Villain Bob Page's sinister VersaLife corporation is based here, as well as several warring factions of Triad gangsters.

5 AREA 51
The infamous 'top secret' USAF base in Nevada is secretly home to a mass surveillance system that's covertly spying on the world.

And it's these toys, as well as Denton's augmentations, that makes every playthrough of *Deus Ex* a wildly different experience. The first level, Liberty Island, showcases everything that's great about the game's open-ended design and how it rewards creative thinking. It's smaller than other levels, and I'm still finding new ways to infiltrate it. The statue not only provides a useful navigation point, but her missing head, blown off by terrorists, is an evocative piece of world-building. A clue that maybe everything isn't totally cool in this dystopian vision of the future.

Terrorists have taken over the island, and you have to deal with them. But how you go about this is truly up to you. There are dozens of entry points into the statue, some more dangerous than others. If you want to waltz in through the front door, you can. But you'll have to find a key, hack a series of cameras, and deal with a security bot. Or you can stack crates to climb up to the statue and avoid the security systems altogether, but will have to deal with a group of terrorists in an open area without much cover. You learn these things through experimentation, and that's part of what makes *Deus Ex* so compelling. You're presented with these big, complex puzzles and the game leaves you to figure out how to solve them by yourself. And when you do, it's hugely satisfying.

WALK AND TALK

But it's not all espionage and infiltration. Outside of missions you're free to explore, talk to NPCs, complete sidequests and learn more about the state of the world through documents and news reports. *Deus Ex* is an enormous game, featuring three massive cities – New York, Hong Kong and Paris – and other locations including Area 51. You simply couldn't make a game this big today with the visual fidelity expected of modern games. In New York you witness the devastating

"Are we the baddies?"

It's all gone a bit X-Files.

His vision is augmented.

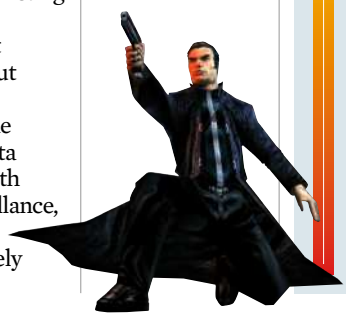
effects of the mysterious Grey Death virus, while in Hong Kong you team up with Tracer Tong and the Triads to investigate an Illuminati presence there. There are so many secrets hidden in these city hubs – and overwrought philosophical debates to be had with talkative NPCs – that a thorough playthrough of the game could easily take 50 hours.

But while the levels are huge, they're not big for the sake of it. This was another thing Ion Storm outlined in their design document as being important. "So many games simulate huge worlds and brag about it," it reads. "Witness *Daggerfall* with its hundreds of generic towns, its shallow conversations, and its randomly generated quests. We feel there's more to be gained by limiting the size of our simulation so we can increase the density of interaction."

And this density of interaction is another of *Deus Ex*'s many strengths. Its levels are filled with things to prod, poke, switch on and mess with – from incidental details like flushing toilets to intricate security systems that can be manipulated to help you sneak through the level. "This gives the illusion that this is a real, vital place," reads the design document. "It makes the levels feel like they have a life of their own, independent of player action."

And it has a sense of humour too, often as a result of this freedom and interactivity. If you stumble into the ladies' bathroom in UNATCO's Liberty Island HQ – which most players will as they hunt for secrets and hidden items – your boss Joseph Manderley (who recently appeared in *Mankind Divided*) will give you a stern talking to about it. Ion Storm knew players like to explore every nook and cranny of a level, and they made a joke in response to it.

It's a small detail, but one of countless tiny reactive moments that reinforce the idea you're having an impact on this world, not just existing in it. And who could forget mechanically-augmented agent Gunther Hermann ranting about getting the wrong soda from a vending machine, convinced the maintenance man has a vendetta against him. The story deals with some heavy stuff – mass surveillance, corruption, conspiracies, viral epidemics – but it offsets it nicely with some dry humour.



NEW WORLD ORDER

The* Deus Ex *series so far, from best to worst

1 DEUS EX
It's showing its age, badly in places, but the original's sprawling levels, deep systems, and conspiracy-laden plot are hard to beat.

2 HUMAN REVOLUTION
A worthy sequel with beautiful art direction, intricate level design, and two uniquely atmospheric, detailed future-cities to explore.

3 MANKIND DIVIDED
Definitely a great *Deus Ex* game, but the weak, aimless story and single city hub mean *Human Revolution* just has the edge over it.

4 INVISIBLE WAR
A confused, misguided attempt to streamline the *Deus Ex* experience for consoles. But, perhaps, not quite as bad as history remembers.

5 THE FALL
A horrendous PC port of an average mobile game. *Invisible War* gets a lot of hate, but this is the true nadir of the series so far.

Gunther, defeated by a vending machine.

THE ILLUMINATI SENDS A SQUAD OF MEN IN BLACK TO KILL YOUR BROTHER

A great example of the game's reactivity can be found in the Hell's Kitchen level. Denton's brother Paul, who ends up being hunted by the Illuminati, is holed up in a grimy hotel. It's called the 'Ton' by the locals, referring to the fact it was once a Hilton, but the 'HIL' on the sign has faded away. After completing a few missions in New York, Paul's safehouse is compromised and the Illuminati sends a squad of 'men in black' agents to kill him.

These guys are armed with heavy weapons and can take a ridiculous amount of damage. Paul tells you to run and escape through the bathroom window, which most players will do when faced with these seemingly impossible odds. If you escape, Paul dies and never appears in the game again. But if you stay and fight, and somehow manage to kill the men in black *and* the UNATCO troops who've invaded the hotel, Paul will appear in Hong Kong. It's unlikely that players at this stage in the game, especially on their first run, will have the skill or augmentations to win this fight, but the fact you *can* is precisely why *Deus Ex* is such a special game. It has a response, even if it's just a line of dialogue, for almost everything you do.

ALL MOD CONS

One part of *Deus Ex* that's really showing its age, though, is the visuals. It's a hideous game, with blocky environments, blurry textures and ugly character models. But luckily there are mods that will sort most of these problems out, including the incredible *Revision*. This overhaul is free on Steam for anyone who owns the GOTY edition, and as well as fixing bugs and remixing several maps, it makes it look slightly nicer to modern eyes. But it does change quite a few fundamental things, so if you want to play the game as Ion Storm intended it's probably best to stick to the original version.

Then there's *Shifter*, a mod that adds further depth to an already deep game and exists to, in its creator's words, "remove the suck" from the base game. It introduces a skill point system that rewards you for feats the vanilla game would ignore, like taking out a room full of men in black. It makes enemies smarter and tougher. And it gives weapons alternate fire modes, including launching napalm bombs with the flamethrower. Again, installing this will seriously alter the game, so think carefully before trying it – especially if it's your first playthrough. Some people don't like *Shifter* or *Revision* at all, but that's exactly what PC gaming, and *Deus Ex*, are all about: choice.

The game is still totally playable without any mods, of course. But you might have to dig through some forums to find out how to get it running at modern resolutions. The Game of the Year edition (whatever that means) is often on sale for a tiny amount of money on Steam, so if you've never played it before, there's really no excuse.

There's a long-running internet joke that whenever *Deus Ex* is mentioned on a forum, someone will reinstall it. And it's something you should consider. Because over 20 years later, even if the visuals don't hold up, the game still does. ■

DECLARATION OF WAR

How SHOGUN: TOTAL WAR started a 20-year legacy... but almost didn't.

By Fraser Brown

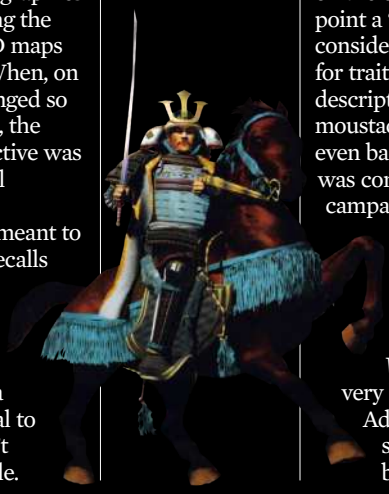
Two decades ago, *Shogun: Total War* spawned a history-spanning strategy series, several spin-offs and even a detour into Warhammer. Almost all of them are unified by tactical real-time battles, turn-based empire-building, and a foundation that was established all the way back in the late 1990s, during *Shogun*'s development. But the first concept for the game looked very different.

In 2000, Creative Assembly released its hybrid. There was diplomacy, trade, ninjas going around murdering people; then you'd quickly have to switch gears so you could micromanage individual units and crush your enemy in real-time scraps. These fundamentals haven't been changed, but before the studio came up with the enduring formula, it was creating a traditional *Command & Conquer*-style RTS.

SHOGUN CONTROL

The first change came when graphics cards started appearing, giving the team the freedom to build 3D maps with more realistic terrain. When, on a whim, the camera was changed so that it pointed at the horizon, the traditional top-down perspective was also thrown out. But one vital ingredient was still missing.

"The campaign map was meant to give context to the battles," recalls artist Nick Tresadern, who joined when the *Total War* team was just seven people. "We thought if we just did a series of battles in a row it wouldn't be as personal to the player because they didn't choose to fight that next battle. By doing the campaign map, the player chose to move into that province and fight that army; it made each battle particular to them."



Features more common in meaty tabletop wargames at the time also made an appearance, but thanks to the real-time 3D fights they were less abstract. Cowardly units could make a break for it and flee the battlefield, ignoring orders, while line of sight could be affected by fog and terrain.

"The battles innovated in a few ways, certainly in terms of battlefield realism," says UI designer Joss Adley, who also joined Creative Assembly during the *Shogun* days. "We still had these sprites running around, which everyone is familiar with, but we added morale, the idea of fatigue and the idea of weather affecting unit performance. It was quite severe in some cases – if it was a rainstorm, the primitive arquebus guns just wouldn't fire at all."

GRAND AMBITIONS

Shogun was two deeply connected games in one, and not a lot was left on the cutting room floor. At one point a 'Guess Who' feature was considered, where you'd have to look for traitors based on vague descriptions like 'he has a moustache'. It didn't survive. And even back then Creative Assembly was considering a multiplayer campaign – and a play-by-email system – though it didn't end up appearing until *Napoleon*. At least *Shogun 2* benefited.

"It completely laid the foundations for all the *Total Wars* to follow, and there's very little we removed," says Adley. "It was mostly adding on stuff. Obviously there was a big change with the campaign map style from *Medieval* to *Rome*, where it went from Risk-style to more action-point-based, but apart from that pretty much everything [else] remained."

Creative Assembly, which had previously developed EA Sports games, didn't know it had a series on its hands, but it was prepared. "The *Total War* part is the brand, and that was in there quite early," says Tresadern. *Total War* was there before *Shogun* was settled on, and the team knew it could translate the game to another setting, which it soon did with *Medieval*.

With future games came new systems inspired by the settings, but other changes came with better tech. Multiplayer, larger army sizes, sieges with loads of destructible buildings – every iteration pushed things forward. Back in *Shogun*, even with the sprite units, memory constraints imposed some serious limitations.

"We didn't have enough memory to do left and right, so when the guys moved left it just flipped the sprite in real-time," Tresadern remembers. And while the campaign had a bespoke, themed user interface, the battle UI was stuck with some white boxes because there was no more space for textures.

While *Total War* has carried on what *Shogun* started, surprisingly few other games have even attempted to take a crack at it. Strategy developers have definitely taken notes and built on *Total War* ideas, but hardly any have remade the whole. Maybe they're the sensible ones.

"Setting out to make a project that's essentially two projects in one – it is double the amount of work – I think is just a crazy thing to do," says Adley. "I don't think anyone wants to go there. I'm surprised we did." ■

ABOVE: Even with the sprite units, it's still recognisably *Total War*.

FAR LEFT: The Throne Room scenes are one of the few things that haven't continued.

BELOW: The campaign was added to support the battles, but it's become just as important.

SHOGUN WAS TWO DEEPLY CONNECTED GAMES IN ONE

Now that's dynamic lightsaber combat.

STAR WARS: KNIGHTS OF THE OLD REPUBLIC

Revisiting the RPG in a time when Star Wars is everywhere. *By Andy Kelly*

Like many people, I recently finished season 2 of The Mandalorian and was left with a hunger for more Star Wars in any form. I rewatched the original trilogy, read a selection of graphic novels and books (including Steve Perry's brilliant Shadows of the Empire), and – best of all – decided to replay BioWare's classic Star Wars RPG *Knights of the Old Republic*.

The last time I played *KOTOR* was around the time of its UK release in the autumn of 2003, and it was the perfect antidote to the disappointing prequel trilogy. George Lucas was two films deep by this point. Attack of the Clones was released the year before and I was not a fan, to put it mildly. But here was this videogame, set 4,000 years before Luke Skywalker, Darth Vader, and the Death Star, reminding me of why I loved Star Wars in the first place. A rare, thrilling chance to explore the ancient, unseen history of my favourite fictional universe.

Today, after years spent drifting in the pop culture Dune Sea, Star Wars is in a very different place. A whole new film trilogy has been and gone, along with several spin-offs. The series successfully made the jump to the small screen, including the aforementioned Mandalorian, which is the most I've enjoyed a Star Wars thing in ages. And owner Disney just recently announced a galaxy's worth of new movies, books, and TV shows. Honestly, it's a bit much.

The Force Awakens landed so perfectly because it had been years since the last good Star Wars film. Rise of Skywalker, by most accounts, did not – not only because it was a cowardly retcon of The Last Jedi and ultimately just a bad, confused film, but because people were sick of Star Wars, at least in its traditional form. I went to a midnight screening of Awakens, and I didn't even bother seeing Rise on the big screen. They lost me. So as much as I enjoyed The Mandalorian, which reignited my passion for the series in a big way, I wondered if by installing *KOTOR* I was at risk of reaching Star Wars overload once again.

NEED TO KNOW

RELEASED
2003

DEVELOPER
BioWare

PUBLISHER
LucasArts

LINK
bit.ly/starwarsknights

Rocking the double lightsaber 4,000 years before Maul.

Technically most of this isn't canon these days.

You'd be furious too if you had to live on Tatooine.

But what sets BioWare's game apart, even after all this time, is where it sits on the timeline. Most of the Star Wars stories being told today revolve around the Skywalker clan and other events from those nine films. Even The Mandalorian, which did a good job of carving its own path through this galaxy, succumbed to the temptation – particularly in the latter half of season 2. But by throwing you back to the days of the Old Republic, *KOTOR* gives you a fresh perspective on this universe, letting you witness its rich and storied history first-hand.

GOLDEN AGE

When the game begins, the Republic is at war with the Sith, led by the evil Darth Malak. The Jedi have been left scattered and vulnerable, with many turning to the Dark Side and joining Malak's growing army. And that's where you come in, a hero with a mysterious past who joins the dwindling Jedi Order and embarks on a quest to stop Malak and his powerful Sith fleet. Those are the broad strokes, but things get a lot more complicated – especially when the protagonist learns, in a very Star Wars plot twist, a shocking truth about their shadowy past.

Of course, there's the question of canon. It's a great story, but did it 'really' happen? Another big change that occurred between *KOTOR*'s release and now is that the events of the game may no longer be part of the main Star Wars continuity. When Disney snapped up Star Wars it categorised this game, and countless other Star Wars spin-offs from the so-called expanded universe, as 'Legends'. That said, some things BioWare created for *KOTOR* – the planet Taris, card game pazaak, and the Selkath race, to name just a few – have appeared in projects that are considered canon. So the whole situation is a little unclear. There's also a rumour that screenwriter Laeta Kalogridis is working on a *KOTOR* movie for Disney, so maybe this story, if the film sticks closely to it, will be canon after all.

Really, though, it doesn't matter. Just because the classic short story anthology Tales of the Bounty Hunters is as non-canon as it gets doesn't mean it isn't still a fun collection of Star Wars yarns. And even though we now know it was

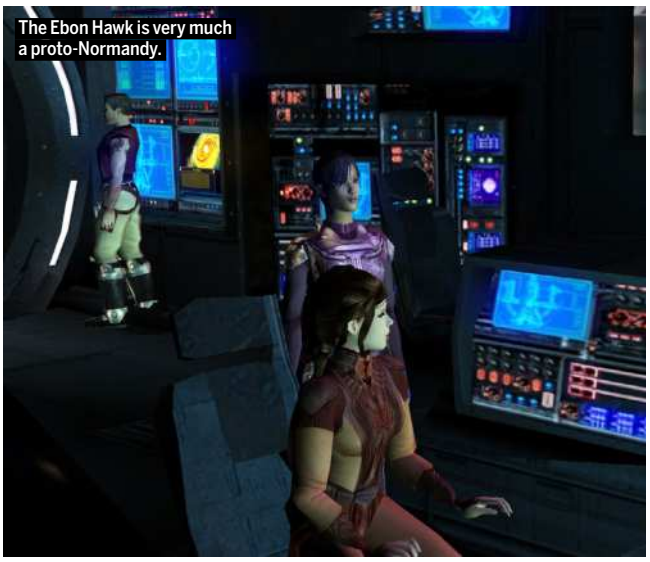
PARTY ON

Best to worst companions

1. **CARTH ONASI** – Soldier, hero, nice guy, handy with a blaster.
2. **HK-47** – Assassin droid who despises all organic life.
3. **BASTILA SHAN** – Powerful Jedi, knows her way around the Force.
4. **MISSION VAO** – Tough-willed teenage Twi'lek with an attitude.
5. **CANDEROUS ORDO** – Cranky Mandalorian with a very large gun.
6. **JOLEE BINDO** – Wry old Jedi who straddles the Dark and the Light.
7. **ZAALBAR** – Likeable Wookiee, but never has much to say.
8. **JUHANI** – Kinda boring Jedi you can save from the Dark Side.
9. **T3-M4** – Astromech droid with no actual personality.

Star Wars: Knights of the Old Republic

Mandalorians weren't always as stylish as Pedro Pascal.


The Ebon Hawk is very much a proto-Normandy.

About to drop the freshest album this side of the Rim.

Rogue One's Jyn Erso, not Kyle Katarn, who stole the plans for the first Death Star from the Empire, *Dark Forces* remains a superb Star Wars game. Some fictional universes benefit from a consistent, traceable timeline, but Star Wars is like a myth, a fairytale, and that makes this less important. Who really knows what happened 4,000 years ago? *Knights of the Old Republic* is just one possible version of those events.

However, despite the chronological gulf, *KOTOR* still has plenty to scratch any Star Wars itch you might develop. If anything, BioWare made its take on the universe a little *too* similar to classic Star Wars – especially considering the amount of time that's supposed to have passed between this game and the original trilogy. But I'll let it slide, because the established language of Star Wars – blasters, speeders, astromech droids, cocky smugglers, pious Jedi, and so on – lays a familiar foundation to tell this new story on. BioWare could have created something completely different and alien, and I'm sure they would have done a great job of it, but it might not have felt very Star Wars.

And even though some of the lore has since been contradicted by Jon Favreau and Dave Filioni's TV show, a heavy Mandalorian presence makes *KOTOR* particularly enjoyable if you've just finished watching the adventures of Din Djarin and his tiny green Force-sensitive friend. At this point in time the Mandalorians have just lost a war, scattering their clans around the galaxy. You run into a few of them, including a gladiator named Bendak Starkiller (no relation to the hero of *The Force Unleashed*), and Sherruk, the powerful leader of a gang of raiders who loves nothing more than killing Jedi and collecting their lightsabers as trophies.

You also party up with a Mandalorian: a grouchy war veteran named Canderous Ordo, whose Dark Side alignment makes him an ideal companion for anyone role-playing as such. And if you're not, then he always has a sarcastic remark ready when you follow the Jedi Code and deny a reward for doing a good deed. Turning down credits gets him particularly hot and bothered. I also really like BioWare's take on what

OUTER WORLDS *A selection of the planets you visit in* KOTOR

DANTOOINE
A quiet, remote world where the protagonist learns the ways of the Jedi, and tests their new lightsaber out on a group of Mandalorian raiders.

TARIS
A planet-sized metropolis. The upper city is safe, relatively speaking, but the dangerous lower levels are ruled by crime-loving swoop-bike gangs.

TATOOINE
A barren desert world you may have heard of before. When the protagonist arrives, the Czerka Corporation has laid claim to the planet.

MANAAN
A vast ocean-covered planet. The protagonist visits its capital where they uncover an evil Sith plot to brainwash children who are Force sensitive.

Why do Star Wars games always make you fight so many animals?

KOTOR IS SET IN THE OUTER RIM – THE WILD, LAWLESS PART OF THE GALAXY

Mandalorian armour might have looked like thousands of years ago. It's actually quite different, but the T-shaped visor is a nice visual link to the Beskar gear that we're used to seeing being worn by the likes of Boba Fett and Bo-Katan.

OUTER SPACE

And like The Mandalorian, most of *KOTOR* is set in the Outer Rim – the wild, remote, often lawless part of the galaxy where all the best Star Wars stories take place. Taris, the first planet you visit, is like a rougher Outer Rim take on Coruscant – a planet-sized metropolis plagued by crime and ruled by ruthless swoop bike gangs. You also get to visit the quiet agrarian planet of Dantooine, which Princess Leia mentions briefly in A New Hope, and find it besieged by Mandalorian raiders looking for something to do now that they don't have a war to fight. And, of course, there's a stop at Tatooine, the most significant planet in the entire Star Wars mythology, whose desert surface is being strip-mined by the Czerka megacorporation.

But is it still fun to play? *KOTOR* regularly makes lists of the best Star Wars games, but I often wondered how much of that was fuelled by nostalgia. So I was glad to discover that, while rough around the edges, it remains a great RPG. The environments are nicely varied, with compelling self-contained stories relevant to each world's politics and history. The personal journey of the hero, and how they handle that big revelation, is well written and emotionally impactful. The companions are memorable; both in their interactions and how they respond to your decisions. It's still clunky, with a messy UI and stiff animation, but the challenging combat, reactive quests and strong writing absolutely hold up.

It's also interesting, as a *Mass Effect* fan, to see the genesis of that series here. The first *Mass Effect* is basically a refinement of *KOTOR* minus the Star Wars stuff. Flying between planets, chatting with companions aboard the Ebon Hawk and facing tough moral choices in quests, I can't help but think of Commander Shepard and the gang. *KOTOR* is BioWare's first really successful transition from 2D games like *Baldur's Gate* to three dimensions. Although interestingly, the combat is still rooted in Dungeons & Dragons, borrowing its d20 system – although the developer does hide this here more than it does in its Infinity Engine games.

And the good news is, it runs fine on modern PCs. To play in higher resolutions you'll need to do some modding, so check out the game's entry on the PC Gaming Wiki for instructions. It's worth reinstalling, even if you're burned out on Star Wars. *KOTOR* is detached enough to still feel like a fresh take on the material – which is a weird thing to say about a game that came out when George W Bush was president. But with Disney still sticking closely to that familiar pool of characters and events, *KOTOR*'s distance from them is worth celebrating even more. ■

CHANGE *the* WORLD

Looking back at *World of Warcraft*, PC gaming's most important MMO.

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The SCARAB LORD

Destiny 2's game director talks about *World of Warcraft*'s most ambitious world event ever. ***By Steven Messner***

When *Destiny 2* director Luke Smith sends an email, his signature reads a little differently than you might expect. "Luke Smith, Scarab Lord" – an honorific given to just a few hundred *WoW* players out of the tens of millions who have played since it launched. It's a title Smith came to own when his Tauren Shaman, Aganathyre, stood before thousands of players on the Eredar server one fateful Saturday morning in spring 2006 and rang an ancient gong.

"Aganathyre, Champion of the Bronze Dragonflight, has rung the Scarab Gong," read a broadcast to every player in Azeroth in that moment. "The ancient gates of Ahn'Qiraj open, revealing the horrors of a forgotten war..."

ENEMY AT THE GATES

In 2006, Blizzard launched a world event so ambitious that, to date, nothing has eclipsed it. With many of Azeroth's original threats defeated, players' attention turned to Silithus, a land on the doorstep of the dormant insectoid empire of Ahn'Qiraj. To open the gates and unleash the monsters (and loot) within, players had to contribute to a war effort that required cooperation on a scale never seen in *World of Warcraft* before or since. It wasn't just words in a quest window — all of Azeroth came together to fight the Qiraji.

As the raid leader of Paradox, Eredar server's top Horde guild at the time, Smith didn't realise what he was doing when he claimed Broodlord Lashlayer's head. The guild had cleared the Blackwing Lair raid, where the Broodlord resided, plenty of times. But Lashlayer's head was a new item they had never seen before. Because only one version of it dropped for the 40 players in the raid team, Smith took it for safekeeping. "I said hey this thing is going to drop from Broodlord, it's the head, and I'm going to take it," Smith says. "This was before people knew what it was for." He didn't know it would put him on the path to becoming a legend.

Lashlayer's head became the first piece in a quest chain to build The Scepter of the Shifting Sands, an artefact that would ring the Scarab Gong and open the Gates of Ahn'Qiraj for everyone on the server. But doing so was a gargantuan effort. To fuel the war effort, players in each faction had to gather just over a million different supplies from 90,000 copper bars to 250,000 Mageweave Bandages – each one handcrafted by an actual player.

> **"WE WERE SHARING IN THIS QUEST TOGETHER AS A GROUP"**

Meanwhile, Smith and his guild were racing to beat top Alliance guilds and build the sceptre first. Part of that race involved grinding reputation points with the Brood of Nozdormu by killing Qiraji monsters and turning in their carapaces. Smith and his guild enlisted the aid of other Horde guilds, offering to run them through difficult raids for gear in exchange for turning in carapaces on Smith's behalf. "You had to create a supply chain," Smith says. "It wasn't just Paradox, it was a server-wide effort – easily hundreds of players."

It was a 24-hour effort for Smith's character. When he slept, friends would log into his account to play and receive carapaces from others. During the day, Smith organised raids to defeat the bosses required to earn the three shards to craft the sceptre.

One quest required defeating a raid boss that broadcast a message to all players letting them know what was happening so opposing guilds could interfere. Another involved a 'smash and grab' operation where Smith had to infiltrate the human capital of Stormwind and steal the page of a book. "It was completely transcendent," Smith explains. "I didn't do any of this by myself. We'd all get into Ventrilo and I would read the whole quest text I was seeing to everyone. We were really sharing in this quest together as a group."

Amazingly, Smith and his guild beat the Alliance and became the first to complete The Scepter of the Shifting Sands, grind the requisite reputation and amass the millions of supplies. It was official: he would become Azeroth's champion against the Qiraji threat and the Scarab Lord.

OPEN SESAME

A bleary-eyed Smith logged into *World of Warcraft* to an audience of thousands. Paradox had formed a protective line creating a path to the Scarab Gong while a sea of Alliance and Horde players waited eagerly. Smith tells me the moment is etched so clearly in his mind he can remember the exact armour his Shaman was wearing. "I walked up to the gong and the game was running at a profoundly sad framerate," Smith laughs. "It's like you're playing a slideshow, though that's not how it felt at the time."

The moment that gong was rung, and the game-wide broadcast made sure everyone knew Aganathyre's name, the Gates of Ahn'Qiraj opened and hundreds of monsters spilled forth. It was a battle that would last ten hours, but Smith and Paradox weren't there to see it. They waded through the hordes and began a new race: the first to clear the new raid.

Smith didn't realise it, but that gong rang an end to a life-defining moment. "It was such an important chisel that would hammer me into what I would become today," Smith tells me. "My time with *World of Warcraft* is really embodied by the Scarab Lord experience." ■

WORLD *of* WOWCOHOL

Building *World of Warcraft*'s most impressive booze collection. *By Nika Harper*

It all started in Zul'Gurub, in 2005... wait a second, strike that. It started with *World of Warcraft*'s launch in 2004.

WoW is a game with so much content that it's impossible to have everything, and collecting achievements, mounts, pets or fashionable armour is not rare. I ended up taking a different route: since the old days of *WoW*, I have collected alcohol.

When the game launched, alcohol was included simply for whimsy. Upon drinking, your screen blurred a bit, typed speech would slur and walking in a straight line was nigh impossible. This was completely useless, yet tons of fun. Getting drunk was a money sink and a pastime you shared with friends, but the habit was also surprisingly cost-prohibitive. It's difficult to get loaded on 40-silver bourbon all the time when you had to save up for that expensive mount. Regardless, my friends and I imbibed with impunity, spending our time being social and ridiculous instead of grinding for cash.

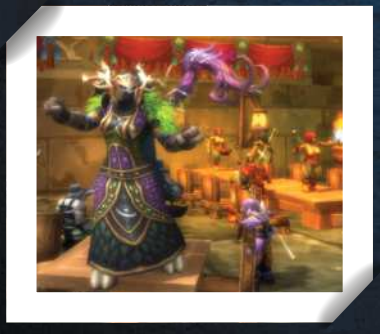
There was an unobtrusive island in the Zul'Gurub dungeon which nonstop-spawned Darkmoon Special Reserve, the most potent alcohol in the game, and it could be looted for *free*. As a Druid, I would stealth around, dodging the murderous mobs, and fill my packs with a bounty of booze to share with friends. For a time, I was the guild drunk, my chat messages all punctuated by a "...hic!" Over time the prices of this habit became trivial, but I still had appearances to keep up. When achievements were released, guess which I got first?

TIPSY

One thing I'd noticed is that although the achievement 'It's Happy Hour Somewhere' required 25 beverages, the progress bar kept count of every unique drink above that amount, and since I was the guild boozer I took pride in raising that number. With some finagling, the game could show you a list of the drinks you had not yet consumed for further credit, and this is when the true obsession began.

I started to appreciate how varied and difficult it could be to attain these absurd drinks. Some were obscure quest rewards, others required a special dungeon run or killing certain mobs. I got Alliance friends to sell Rhapsody Malt on the black market, or gathered pals to do a Dire Maul tribute run so Stomper Kreeg would sell me Gordok Green Grog. Mostly, these drinks functioned in the typical way, but Sulfuron Slammer actually set your character on fire. Suddenly, I was hooked: I needed to try as much of this booze as I could get, and the collection began in earnest.

With every expansion to the game, it became clear that the developers



BELOW: The NPC bartenders don't seem to care about tips at all.

were having loads of fun, and it was those little touches that made playing such a delight. Drinking Moonglow made your character sparkle, and Brewfest was an entire event based upon getting trashed, with items like a pony keg and amusingly, a keg pony. There were call-outs to local breweries in Lavastone and Da Bruisery, and ingratiating yourself with a tiny tribe of murlocs allowed purchase of a Winterfin Depth Charge. This game was as obsessed with getting loaded as I was, and it provided a plethora of ways to go about doing so. An intrepid Rogue could pickpocket alcohol that would, presumably, be smashed into oblivion upon the mob's death, so of course I made a Rogue with the express purpose of liberating liquor from the pockets of my enemies.

In addition to adding whimsy to the world, alcohol seemed to cater to the roleplaying contingent of *World of Warcraft*. Buying a keg of Aged Dalaran Red wine displays a timer of 365 days, so if you keep it in your bank for a whole damn year it turns into a blue item, Peaked Dalaran Red! In the ever-exclusive Brawl'Gar Arena zeppelin, buying a single bottle of Moneybrau for *one thousand gold* makes you puke up piles of cash. Diligence in using Blingtron or an Ogre Brewing Kit sometimes yields exclusive alcohol not found anywhere else in the game. And it does absolutely nothing! It exists for the sheer joy of it!

THIS GAME WAS AS OBSESSED WITH GETTING LOADED AS I WAS

ABOVE: Anything to get myself out of an awkward situation.

SMASHED

Finally, I joined a roleplay server with the notion of collecting, cataloguing and sharing every single alcoholic item I could, which still challenges me to this day. I have spent countless hours fishing, pickpocketing, murdering, rep-grinding, questing and waiting for those special weeks (or even single days) in which an in-game event might have booze that I haven't snagged before. I have even managed to contribute names to two drinks in the Kirin Tor Tavern Crawl: Mechs on the Beach and Entangling Rootbeer (I'm still fond of the unselected Val'Shiraz and Mrrrglrita).

Little details can make a good game very special, and with every looted Half Empty Bottle of Prison Moonshine, I found a way to collect those nuances of creativity in the world *and* get wasted in the process. So if you're ever on Moon Guard and see the Darkmoon Drink Society, ask for a cocktail. I'll mix ya up somethin' good ...hic! ■

CLASS WARFARE

The pull of *World of Warcraft*'s PvP Arena.

By Chris Bratt

For me, *World of Warcraft* has never been about the dungeons or the raid bosses. As much as I've enjoyed trying to defeat the latest demon lord hoping to destroy all of Azeroth before looting his shoes as a trophy, I would always struggle to return to the same fights week after week. Instead, it was the other half of the game that really got its hooks into me. The often-overlooked PvP.

Back in *Wrath of the Lich King* (the greatest expansion *WoW* has ever had, if you ask me), I fell in love with its most competitive PvP mode, the Arena. Here you can choose to play in 2vs2, 3vs3 or 5vs5 setups, as you attempt to kill everyone that isn't on your team before they do the same to you. It's explosive. This is where the best players in the world (*of Warcraft*) come to prove their worth.

UNHOLY FIRE

I used to stick to the 2vs2 bracket back then, playing an unforgivable number of matches alongside a buddy of mine each season. He played a Rogue, which is a class very clearly designed for PvP combat with its emphasis on stealth and dealing damage quickly. I, on the other hand, favoured the Shadow Priest. Back in the *Wrath of the Lich King* days, at least, this meant I spent the vast majority of my time running away from the other team wishing I'd levelled up a Warlock instead. It was fantastic.

Similarly to raiding, you do need some decent gear to hold your own in the arena, but two other factors truly separate the best players from the rest of the pack. First of all, you need an encyclopedic knowledge of how each of the game's classes work. This means learning what their

abilities do and how often they can use them. With 12 classes, each offering three specialisations, this is a lot easier said than done. Fighting a Feral Druid, for example, is a different experience to taking on a Balance Druid. Despite them being the same base class, you could be dealing with either a stealthed melee damage dealer, or a giant magical owl. These require rather different responses.

The other key to PvP is timing. Many of the abilities in *WoW* have cooldowns. This stops you from only relying on your most powerful skills over and over again, because that'd be boring and we'd all end up playing mages spamming Dragon's Breath or something rubbish like that.

The trick, then, is to use your cooldown abilities at the right moment, and likely in conjunction with your teammate. But more than that, it's about noticing when your opponents are trying to do the exact same thing to you. If you see this coming and survive, you'll suddenly be presented with a window in which your team has the upper hand. With your opponents' most powerful abilities on hold, they'll likely want to back off. That's when you strike.

YOU DO NEED SOME DECENT GEAR TO HOLD YOUR OWN IN THE ARENA

HOLD BACK

The best example of this rule can be seen with an ability that removes movement-impairing effects from your character. If you've been stunned or snared, you can use this ability to escape. It's a vital part of PvP and an ability you'll be using in almost every match you'll ever play, but it's also got a hefty two-minute cooldown. Use it too early and a good team will punish you for it, controlling how and when you move from that point onwards. This presents some amazing tactical decisions for you to contend with as you're playing. Let's say you're frozen in place for a few seconds while your partner is being shredded to pieces by the other team: do you use your ability now and help them out, but risk being in an even worse situation in a few seconds time? Or, do you try and hold out? Can your teammate survive long enough for that to work? Is that a risk worth taking? Those questions are what I love about *WoW*'s PvP combat. In the Arena you're constantly reacting to what's just happened.

It has its problems, of course. Blizzard has struggled to balance *WoW* in a way that works for both PvE and PvP. Characters end up using a lot of the same abilities across both aspects of the game and this has caused no end of issues over the years (2009 was cruel for Shadow Priests, let me tell you). But I have such fond memories of my time spent with this game. It's not for everyone, and it can make for a very confusing spectator sport, but *WoW*'s PvP is why I play each new expansion. Keep your raid invites to yourself, I'm after the Gladiator title. ■

MAIN: Looking for an Arena partner? I found mine duelling outside Orgrimmar.

World of Warcraft

WORLD *of* ADVENTURE

A guide to Azeroth. ***By Andy Kelly***

NORTH

NORTHREND
Introduced in the *Wrath of the Lich King* expansion, Northrend is an icy continent located in Azeroth's frozen north. From the Howling Fjord to Crystalsong Forest, it's a brutal landscape ruled by the Lich King, and one of the game's most striking regions.

AZSHARA
This forest zone was pretty unremarkable until the *Cataclysm* expansion changed it. Goblins transformed the landscape with their janky industrial tech, and the post-*Cataclysm* quests here are some of the most enjoyable and varied in the game.

ORGRIMMAR
The Kalimdor equivalent of Stormwind City, evoking similar feelings of nostalgia for Horde players. This vast multicultural capital is somewhere you'll return to often throughout your Horde character's life, and is fun to zip around on a flying mount.

KALIMDOR

ASHENVALE
This forest wilderness, located south of Darkshore, is one of the most popular Alliance zones for levelling. It was also a notorious PvP hotspot, with ganking (MMO speak for high-level players killing low-level ones) being a regular occurrence.

ZANDALAR
This subcontinent, the homeland of the Zandalari trolls, will become accessible in *Battle for Azeroth*. It's a lush tropical island dominated by Mount Mugamba, and the jungle is littered with ziggurats where troll Shamans and Witchdoctors dwell.

THE BARRENS
Once upon a time, the Barrens was a major 10-20 levelling zone. As a result, the chat was infamous for new players asking (in the eyes of veterans) stupid questions. However, the zone was changed forever when it was torn apart in the *Cataclysm* expansion.

THUNDER BLUFF
This is the capital city of the cow-like tauren race, located in the centre of Kalimdor. The city is built on towering bluffs and is only accessible by elevator, making it a dramatic setting for some interesting quests that give you an insight into tauren culture.

Z

PANDA

BROKEN ISLES
The Broken Isles became accessible for the first time in the *Legion* expansion. The island chain is scattered with ancient elven ruins, including the remains of the night elf city of Suramar, and is crawling with demons emerging from the Tomb of Sargeras.

SILVERMOON CITY
The arrival of the blood elves in *The Burning Crusade* gave us a chance to explore their grand capital. Silvermoon City is arguably the prettiest of the game's urban zones, with Art Nouveau-influenced architecture and a striking red-and-gold colour palette.

KUL TIRAS
Another new addition to *Battle for Azeroth*, this island is home to proud seafaring humans. The Alliance turns to the island and its strong navy for help in the war against the Horde. The landscape is cold, mountainous, and surrounded by wild seas.

STORMWIND CITY
This capital is one of the most iconic locations in *World of Warcraft*. Players enter through the dramatic Valley of Heroes, a bridge lined with statues of heroic figures. If you've been Alliance since the early days of *WoW*, the nostalgia here is powerful.

PANDARIA
Mists of Pandaria introduced us to this mystical land and its divisive fluffy natives, the pandaren. Influenced by Chinese history and mythology, Pandaria is a vibrant setting with some of the best questing and environment design in the game.

TWILIGHT HIGHLANDS
A new zone added in *Cataclysm*, this rolling green landscape of hills and forests is home to the warring Wildhammer dwarves and the Dragonmaw orcs, as well as Twilight cultists who have sensed the presence of the Old Gods there.

ARISE, MY CHAMPIONS!

An ode to one of *WoW*'s most beloved dungeons. *By Emily Marlow*

Scarlet Monastery, originally a set of four separate spaces introduced into *World of Warcraft* in 2004, was a dungeon painted in vivid narrative brushstrokes. It was a commitment, an ordeal even, but also it was a campy, horror tale full of pop culture references. It spoke of Hammer horror, of Sleepy Hollow, of The Exorcist and Raiders of the Lost Ark. It is, to this day, a fond memory for many a nostalgic *World of Warcraft* player, because we all remember Scarlet Monastery.

TOP: The faithful of Scarlet Monastery eagerly await your input on their doctrine.

For *WoW* players, Scarlet Monastery became a rite of passage. Similar to its plotline of zealots deep in devotion to their cause, Scarlet Monastery required you to commit to it. If you were from the Alliance you would have to travel through countless map zones to arrive at the monastery, including travelling quite close to the Horde-controlled Undercity. It took hours. Because many players would originally attempt the dungeons at a low level and couldn't yet ride a horse, the journey to Scarlet Monastery also had to be undertaken on foot. Whilst workarounds were eventually invented to cut the walk down, this epic march (or should I say pilgrimage) was part of what made Scarlet Monastery so memorable. And of course, no Alliance trip to Scarlet Monastery was complete without a lighthearted Undercity raid after the dungeon was cleared.

THEY'RE BAAACK

The dungeon was a series of seemingly endless corridors lined with stained glass, a monastic setpiece that featured nearly every reference in the Gothic horror rulebook. Militant zealots blindly fighting in the halls? Check. Power-mad priests in the library? Check. A gladiator-style miniboss that one could only access if they had a mythical key? You betcha. It even included a haunted sword that actually talked.

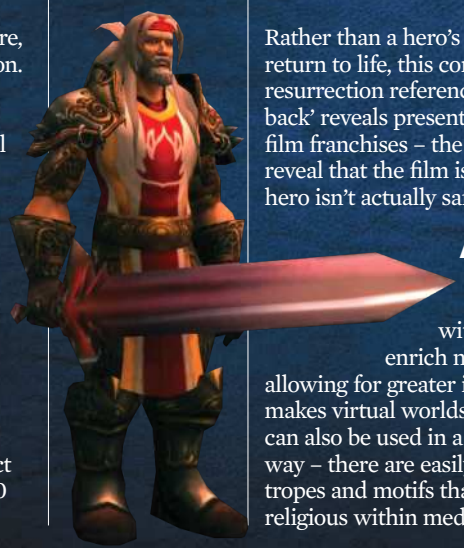
The quests for Scarlet Monastery required players to 'cleanse' the monastery of the rabid cult members, playing directly into the ways in which the Alliance players had already interacted with religion. The Church of Holy Light, based out of

RIGHT: How do you solve a problem like the Plaguelands?

BELOW: Scarlet Monastery used Gothic architecture, tropes and references to great effect.

the Alliance stronghold Stormwind, holds the virtues of respect, tenacity and compassion in the highest regard. Similar to other fantasy churches featured within gaming, such as the Church of Eternal Fire in the *Witcher* franchise, or even the Chantry in *Dragon Age*, the church within *Warcraft* has priests, bishops and archbishops, cathedrals, abbeys, relics and reliquaries. All iconic signifiers of a particular type of organised religion – one of structure, hierarchy and the purity of devotion.

The act of resurrection, performed within the original dungeon, as part of a dynamic final boss fight, is perfectly suited to fulfil this stylistic choice. As players continually interacting with fail states, or the 'You've Died' title screens of the gaming landscape, we often forget how impactful a resurrection is narratively. The resurrection of the initial boss Durand by High Inquisitor Whitemane was a shocking part of the battle. Additionally, her ability to resurrect any other dead enemies within 100 yards was particularly frustrating.



FOR PLAYERS, SCARLET MONASTERY BECAME A RITE OF PASSAGE

Rather than a hero's redeeming return to life, this corrupted resurrection referenced the 'they're back' reveals present within horror film franchises – the final jump scare reveal that the film isn't over and the hero isn't actually safe yet.

AMEN

Religion is often used within games to enrich narrative, allowing for greater immersion – it makes virtual worlds seem real. It can also be used in a purely aesthetic way – there are easily identifiable tropes and motifs that speak of the religious within media. One of these is the way in which games reference the Christian Last Supper imagery – promotional materials featuring game cast members in portraits designed to remind viewers of Leonardo Di Vinci's famous painting. While *Far Cry 5*'s use of Da Vinci is still striking, it has also been seen in *Dragon Age: Inquisition*. This overt referencing can be seen throughout Scarlet Monastery's quest design. Here, religion is used not only as an antagonist, in the form of the zealous Scarlet Crusade, but also as the protagonist's motivation.

All of this – the campy references, the Gothic overtones as well as the inherent drama – was why I loved Scarlet Monastery. How could you not love something that required from you a full evening's work and paid you back with such dramatic, pulp fiction goodness? It wasn't grinding, or a forgettable dungeon that you only did for an achievement. For me it was the best of what *World of Warcraft* could offer – a compelling narrative that was built on relatable tropes, full of references so incredibly cinematic that you instantly understood them. ■

BARRENS *of* HELL

Lost wives, rare drops and Chuck Norris: in defence of *WoW*'s worst area. ***By Matthew Elliott***

Few games contain true rites of passage – watershed moments you can share with other players, which elicit excitable, relatable anecdotes. Beating Ornstein and Smough in *Dark Souls* is an obvious one. Your first romance in *Mass Effect* is another. But for me, nothing defines an era in gaming quite like the meandering, broken, oddly brilliant experience of The Barrens in vanilla *World of Warcraft*. And whereas the first two examples endure because of martial prowess or emotional resonance, the experience of The Barrens galvanised those who survived it precisely because it was a bit shit. An example:

[1. General] [Doombull]: where is makriks wife
[1. General] [Ahanu]: in bed with chuck norris lol
[1. General] [Revara]: Chuck Norris doesn't sleep. He waits.
[3. Local Defense] The Crossroads is under attack!

If you never played *WoW*, this will be gibberish – like the codes dentists call out before they drill your teeth. But for anyone who wasted weeks and months grinding for XP in *WoW*'s Horde faction, it's a window to the past. Barrens chat was a stream of requests, insults and Chuck Norris jokes – like the ur-YouTube comments, long before Pepe avatars or Logan Paul – and it was a constant, reassuring presence during the lonely slog of levels 10-25.

MAIN: A bubbling river of lava never improved anything. The Barrens is no different.

To understand why The Barrens, and by extension its chat window, elicits such nostalgia, we need to examine the area's construction. It was a vast, unavoidable corridor, through which most Horde players would inexorably be funnelled. If you rolled a Troll, Orc or Tauren, The Barrens was the place you'd come when you hit level 10. Even Undead players, isolated on *WoW*'s other continent, would take the trip to join their Horde brethren rather than brave Silverpine Forest alone. It represented a player's first steps into a larger world, as you moved out of the starting areas into zones that had high-level players, and enemy Alliance combatants.

THE GRIND

So the stabilisers came off, you'd start to pedal furiously... and you'd keep pedaling for the next 15 levels. Because back in vanilla *WoW*, nothing happened quickly. This was a time before Dungeon Finder, when you couldn't earn XP from careers like Herbalism or Alchemy. Horde players trying to level up back in 2006 would have to find a group and spend three hours in the Wailing Caverns – not the most efficient use of time – or grind and do quests in The Barrens. There were a few problems with this. Firstly, The Barrens was *huge* – an area so big that when the *Cataclysm* expansion came, it was split into two separate zones. There were also only three flightpaths – one to the goblin settlement of Ratchet, one to Camp Taurajo, and one to the legendary town of The Crossroads – which meant lots of travelling between outposts. And, at the risk of sounding like an old man grunting at a cloud, we didn't get mounts until level 40. You were lucky if you could turn into a ghost wolf and move 30% faster. So if you wanted to get *anywhere* in The Barrens, you were going to have to walk. Or, more accurately, autorun while reading awful Chuck Norris jokes.

And then there were the missions. Endless, doddering quests which had you collecting Zhevra hooves with an absurdly low droprate and enough Quilboar murder to start your own pork farm. But the hunt for Mankrik's wife is perhaps the most memorable quest of all – partly because it was so ridiculously obtuse, and partly because barely a day went by without some Barrens chat innocent asking for directions, only to be met with a slurry of in-jokes and insults. It sounds wretched when I write it down, but like a hygienically-challenged relative in a slapstick buddy movie, we learned to love it.

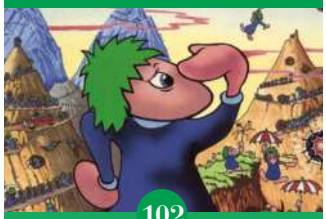
THE BARRENS REPRESENTED A PLAYER'S STEPS INTO A LARGER WORLD

GANK SQUAD

Perhaps we were bound by adversity. Another idiosyncrasy in The Barrens' design was that it was incredibly easy for high-level Alliance players to hop on the boat to Ratchet, take the short walk to The Crossroads, and kill all the flight masters and quest givers. The area was always under attack, becoming a hotspot for world PvP as high-level Horde players returned to clear out the cackling Gnome Warlocks. Whether through design or accident, constant Alliance attacks made the Horde players feel like a persecuted faction. The first place I visited after The Barrens was Duskwood: not to quest or level up, but to spend two months killing Alliance players as a means of catharsis.

When I go back to The Barrens now, it's changed. It's been refined, bisected and – if we're being honest – vastly improved. There are so many ways to level in *WoW* that most players skip it, giving the area the same vibe as an abandoned factory – the products once made here have been superseded, the staff are long dead. But I'm glad I got to play it when I did. Hearing that music stirs memories of months spent butchering Plainstriders under starry skies, of random conversations with strangers sat around flickering digital campfires. I'd wake up early to go fishing at Lushwater Oasis in the hope of catching lucrative deviate fish to sell in the auction house. I'd stare in envy at the top-level players stomping past on mounts I'd never afford. And while *World of Warcraft Classic* will give me the chance to go back, it's madness to think it'll be the same. But for those of you lucky enough to experience it for the first time, who are lost looking for Mankrik's wife, I say this:

Chuck Norris can strangle you with a cordless phone. ■



102 LEMMINGS

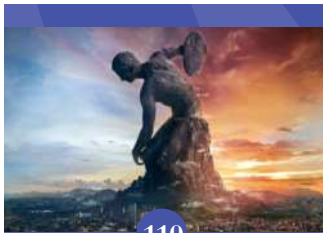
104 EVE ONLINE

106 SIMCITY 2000

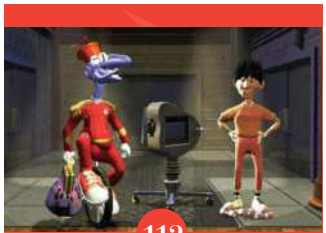
108 LEFT 4 DEAD

PC GAMING LEGENDS

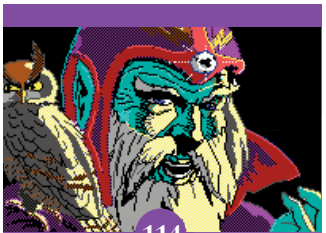
Eight games that have defined PC gaming – and defined us as PC gamers.



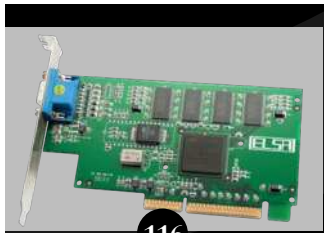
110 CIVILIZATION



112 3D MOVIE MAKER



114 CONQUEST OF CAMELOT



116 DEFINING GRAPHICS CARDS

100

HALF-LIFE 2

Plenty of games can claim greatness – whether acclaimed hits, or cult classics. Only a handful can claim to have changed the industry, and players, forever. Over the following pages are eight that hold that honour. Not only have they helped define PC gaming, they've defined us as PC gamers. And we're also celebrating the hardware that made them possible, with a look back on the graphics cards that shaped PC history.

RAISING THE BAR

The subtle, hands-off storytelling of HALF-LIFE 2 is still hard to beat. *By Andy Kelly*

The magic of *Half-Life 2* lies in how it tells its story. In most games developed in the early 2000s you're forced to endure endless exposition about the world and the state it's in – usually in the form of cutscenes. In *Half-Life 2*, a few scraps of old newspaper stuck to a notice board achieve the same goal; and in a much more evocative way. In the secret laboratory of eccentric scientist Isaac Kleiner, this entirely missable detail refers to a "seven-hour war", Earth surrendering to the invading Combine, and villain Wallace Breen being declared administrator of Earth.

It's everything you need to know in one unassuming texture file – but also, importantly, it leaves enough of the finer details out to let your imagination run wild. This is more effective than an elaborate, expensive cinematic showing the Combine invasion of Earth would ever be, and puts you on a level playing field with Gordon Freeman. Having just been yanked out of stasis by the G-Man, he knows as much as you about this bleak, Orwellian nightmare world; that is, 'not much', which only adds to the unsettling mystery of how Earth ended up like this.

This kind of environmental storytelling continues throughout *Half-Life 2*, painting a more detailed picture of everything that happened while Freeman was on ice. And as you learn more about the invaders' infrastructure, the extent of their assault on the planet becomes chillingly clear. At several points in the game you catch glimpses of Stalkers; human bodies gruesomely retrofitted with alien technology, turned into mindless slaves. Seeing one out of the corner of your eye is, again, more affecting than having someone sit you down and tell you everything about them.

FREE REIN

Half-Life 2 is a game that plays to the strengths of the medium, using player agency as a way to tell a story in a more interesting, intimate way. It's also a masterclass in subtlety. When it's time to travel to Ravenholm, an abandoned town infested with headcrab zombies, all Alyx says, gravely, is, "We don't go to Ravenholm." And that's all it takes. That sentence is absolutely loaded with meaning, and it also makes your first tentative steps into the place scarier. What did she *mean* by that? Valve understands the power of holding back, that less is more, which is something that eludes many developers even now, 16 years later.

Of course, storytelling is just one part of the package. *Half-Life 2* is also a great FPS, with the gravity gun adding an improvisational feel to its firefights. Switching to this once revolutionary physics-manipulating weapon when you're backed into a corner, plucking a saw blade or radiator out of the level and transforming it into a deadly weapon, still feels incredible. The raid on Nova Prospekt, the brutal Combine prison, is tense and thrilling, and working with the resistance in City 17 towards the end of the game features some superb setpieces.

If you haven't played it for a while, you might wonder if the people who still eulogise *Half-Life 2* are half-remembering it through a mist of nostalgia. But play it and you realise that, although it has aged in some ways, it still feels like an important, landmark game. It still delivers as a first-person shooter, and the way it relays its story is still wonderfully subtle and restrained. It's also exciting to revisit when you consider that Valve may be falling back in love with the series. The end of VR prequel *Half-Life: Alyx* dramatically opens up the very real possibility of a *Half-Life 3*, teeing up a sequel I'd lost all hope of ever being made. ■

TOP LEFT: Freeman drives his junker of a car along Highway 17.

VALVE UNDERSTANDS THE POWER OF HOLDING BACK, THAT LESS IS MORE, WHICH IS SOMETHING THAT ELUDES MANY DEVELOPERS EVEN NOW

BIG CITY *Key locations in City 17*

TRAIN STATION

Freeman arrives in City 17 by train, meeting oppressed citizens and enslaved Vortigaunts, all watched over by the ever-present digitised mug of Wallace Breen, the human face of the Combine invasion force.

CITY SQUARE

Emerging from the train station, Freeman gets his first glimpse of the Citadel, the sinister headquarters of the Combine. The city's distinctive Eastern European architecture is especially prominent here too.

CITADEL

Freeman eventually makes his way into the Citadel, confronting Breen and his alien lackeys. Inside, we see the Combine forces being created, including a production line of War of the Worlds-inspired Striders.

SECRET LAB

One of the few safe places in City 17. Here, Freeman is reunited with Isaac Kleiner, a colleague from Black Mesa. And if you pay attention you'll learn a bit more about how the Combine conquered Earth.

FAR LEFT: The game began life as a single animated sprite created by DMA's Mike Dailly.

LEFT: *Lemmings* is one inspiration for a remote-controlled golem army in Terry Pratchett's Interesting Times.

FALLING IN LOVE

LEMMINGS still haunts my nightmares almost three decades later. ***By Edwin Evans-Thirlwell***

The medieval historian St Bede – aka The Venerable Bede, which really ought to be a band name by now – once compared life to a sparrow's flight through a banqueting hall on a winter night: a moment of light and warmth, bookended by darkness. I sometimes like to think of DMA Design's *Lemmings* as a modern reworking of this existential fable, with a couple of major differences. Firstly, it's about stupid rodents rather than birds, and secondly, it unfolds in a kind of Brighton Pier version of hell, all novelty crystals and gold pillars set to unholy chiptune renditions of songs like London Bridge is Falling Down.

Unlike Bede's sparrow, the lemmings need a bit of direction. They drop from a magic window and trundle brainlessly left or right unless otherwise ordered. Your goal is to get them through this souvenir-stand underworld against the clock, by assigning skills such as 'digger' or 'climber'. On the other side of both the entrance and exit portals lies not wintry oblivion, but a heavenly vista of green slopes and blue skies.

If the moral of Bede's fable is to savour every conscious moment, the moral of *Lemmings* seems to be that life is a nasty interlude full of spikes and lava pools, to be navigated as quickly as possible.

RUSH MODE

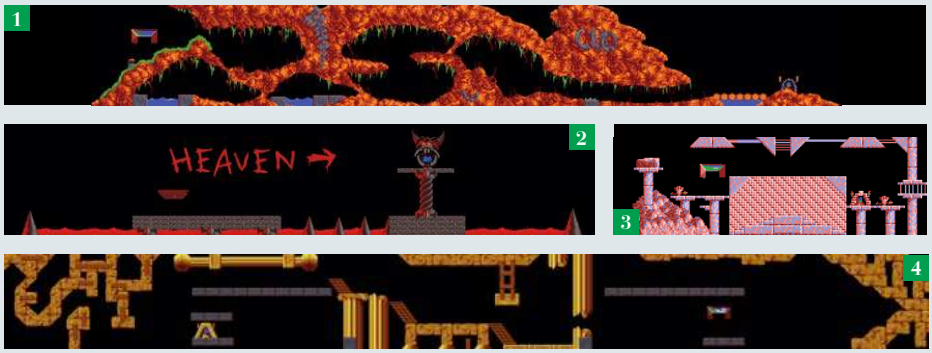
I was seven when I first played *Lemmings*, and it properly did a number on me. I was immediately panic-stricken at the thought of taking responsibility for creatures who are their own worst enemies – creatures who seemingly exist only to traumatise anybody with a protective streak. But once I'd begun, I couldn't let go. Who else, after all, was going to guide these hapless vermin back to their happily-ever-after? *Lemmings* was the game that taught me to empathise with make-believe entities, and I glimpse its mop-haired spectre in every management sim I play today.

The game isn't that difficult to begin with, but mistakes are easily made. Perhaps you've forgotten to set one lemming as a blocker, in order to box in the horde while you send out a lone builder to bridge a gap. Perhaps you've forgotten that there are only so many of each skill to go around: you can't just make every last lemming a floater as they toddle off a cliff. Either way, any oversight transforms the level into a slaughterhouse line, with freshly dropped lemmings dutifully repeating the errors of their siblings, death cries blending into a single, garbled scream. I'm aware there are worse ways to be introduced to the concept of dying, but try telling that to little infant Edwin, bawling his eyes out at the altar of a Macintosh Performa. Better yet, tell little infant Edwin that you can pick skills while the game is paused. Somehow I didn't work that out until 1999.

YOUR GOAL IS TO GET THEM THROUGH THIS SOUVENIR-STAND UNDERWORLD AGAINST THE CLOCK, BY ASSIGNING SKILLS

The other terrible thing that *Lemmings* teaches you is that certain deaths are necessary. Many levels only require you to save a certain percentage, and some lemmings are difficult to retrieve once they've performed their allotted tasks. Blockers, especially, are the most tragic of lemmings, unable to resume walking once deployed unless you send a digger to undermine them. The game's cruellest touch is that it requires you to kill any lemming that can't be saved – individually or, when time is short, care of a big old nuke button. Condemned lemmings don't go quietly into that good night. They shriek and clutch their skulls until they burst. DMA Design, of course, would go onto create *Grand Theft Auto* – a much bloodier game, but for my money, it's actually nowhere near as harrowing. ■

WHITE WILDERNESS *Four of the absolute worst* Lemming*'s levels*



1 THE STEEL MINES OF KESSEL
Dig a path using the exploding lemmings but don't kill more than 90%, and make sure you blow up any blockers that you've left behind.

2 HEAVEN CAN WAIT
You don't have any blockers, so you'll need to trap your lemmings in a pit while creating the route. And do it all in just under two minutes.

3 JUST A MINUTE (PART TWO)
Sixty seconds of frantic wrangling with diggers, bashers, and climbers. You need to hold back the crowd but you also can't afford to dawdle.

4 SAVE ME!
You have to land a lemming on a ledge, then build a staircase and transform that lemming into a blocker, before the others walk off the edge to their deaths.

FOUND IN SPACE

How the terror and tenacity of EVE ONLINE changed my life. *By Steven Messner*

I'll never forget my first real fight against another player in *EVE Online* – it had taken me, a fresh-faced noobie at the time, almost a month to scrounge up the ISK to buy a beloved Catalyst destroyer, and now I was about to lose it fighting a player in a vastly more deadly assault frigate. As my shields evaporated in a single volley, I began shaking so severely from the adrenaline rush that I couldn't accurately use my mouse anymore.

Dying in *EVE Online* is intense. Unlike most other MMOs, where you can simply respawn with all your stuff and carry on with your quest, a destroyed ship is gone forever. That loss stings if you don't have the ISK to immediately purchase a replacement. But while I raged in the moment, those memories are some of the strongest I've had playing any PC game. It meant something to lose that ship. There were stakes beyond good and bad endings or plot twists triggered by dialogue choices. *EVE Online* was the first time I felt the consequences of my actions in a game. The emotional highs and lows that came as a result have defined not just how I think about PC games, but also my career.

SPACE TO GROW

So much of what I've come to love about PC gaming is present in *EVE Online*. It's complex and takes a lot of patience and persistence to understand. Players are given unparalleled freedom in deciding not only what they want to do, but how they fit into the greater *EVE* community, and it's a game that consistently rewards quick wits and clever strategising.

When I first started playing it back in 2012 on a 13-inch Macbook (forgive me), it was my first real exposure to these kinds of PC games that just don't exist on consoles. I didn't know it at the time, but *EVE Online* was the beginning of my transformation into a PC gamer. Though I had always played games on PC, like *World of Warcraft* and multiplayer shooters, *EVE* was a gateway drug that led me to *Mount and Blade* and *Path of Exile* – intimidating and hopelessly complex games that feel almost infinite in their scope. These are now some of my most-played games of all time.

But *EVE Online* is also the one game that got me to where I am today as a senior reporter at PC Gamer. When I was 25 years old, I decided to make a wild pivot and chase my childhood dream of writing about videogames. And because I loved *EVE Online* and the wild space drama that erupts from it on an almost daily basis, I had a hunch other people might like those stories too. My first-ever pitch was to PC Gamer and it was about a band of ruthless murderers in *EVE*. My hunch was right, and my *EVE Online* articles helped establish me as a full-time freelance writer before joining PC Gamer. Since then, I've had the pleasure of writing about everything from *EVE Online*'s cunning pirates to how a scam turned into the game's greatest rescue mission. I've travelled to Iceland, Las Vegas, and Finland for these stories.

EVE Online is an MMO that transcends how I normally think about games and the people that play them. It's a weird alternate universe experienced only through the cockpit of ships that are typically only seen as small icons floating in space. But when those icons start shooting at each other, incredible stories of betrayal, loyalty and karma begin to materialise. I'm not being hyperbolic when I say living, hearing and telling those stories for the past decade has changed my life. ■

LIFE IN SPACE *Five career paths you can take in* EVE Online

PIRATE

Pros

- An exciting life of crime
- Fly fast, extremely powerful ships in small gangs
- Can get rich if you rob a wealthy player

Cons

- Being a criminal makes you a big target
- Can go long stretches without a good ambush
- Good ships are expensive

SOLDIER

Pros

- Get to fight alongside thousands of players
- Ships losses are often reimbursed by your alliance
- Easy to make friends with your teammates

Cons

- Battles sometimes last up to 16 hours or longer
- Bureaucracy can be annoying

MERCHANT

Pros

- Can play whenever you want
- Can become outrageously wealthy with some effort
- Not many risks

Cons

- You'll definitely need to make a spreadsheet
- Kind of dull career
- You'll need to babysit market orders in order to beat out competition

WORMHOLER

Pros

- Explore *EVE*'s scariest, most dangerous regions of space
- Often dragged into thrilling games of cat and mouse
- Can work together in small groups and make big bucks

Cons

- Steep learning curve and extremely dangerous
- Always have to be paying attention to surroundings

EXPLORER

Pros

- Solo-friendly but can still make a lot of money
- Get to sneak into hostile territory and avoid players
- Easy to get into

Cons

- Can go long stretches without making much money
- Have to be paying attention at all times to avoid enemy ambushes

SO MUCH OF WHAT I'VE COME TO LOVE ABOUT PC GAMING IS PRESENT IN EVE ONLINE

BUILD ME UP

The joys of creation and destruction in SIMCITY 2000.

By Chris Livingston

I don't think city-building games, despite the perspective of looking down on all the tiny people and making decisions that can bring them happiness or ruin their lives, really make me feel like a god. I usually feel more like a Peeping Tom mixed with an exasperated parent. I delight in just spying on my citizens to see what they're up to, and getting annoyed when they need something from me. "Fine, I'll build you a hospital! Now stop bloody complaining all of the time so I can get back to blissfully squinting at all the little cars driving around."

SimCity 2000 was a revelation to me. I'd played the original *SimCity*, but *SimCity 2000* swapped from the top-down view and 2D graphics to an isometric perspective, which made my little cities feel absolutely alive and real. There was so much detail packed into its pixels, giving every tiny house and park and skyscraper its own personality. In a few days I'd know my virtual city's neighbourhoods and roads better than the one I actually lived in. After building an airport, I could happily watch the teensy, tiny aeroplanes inching across the screen for hours. I always rushed to build seaports just so a little boat would appear in the waterways. It was like a live feed from a webcam pointed at a real metropolis, long before live webcams were even a thing. *SimCity 2000* was one of the first PC games to really sink its hooks into me, and I'd often eat dinner in front of the screen, not even playing but just observing.

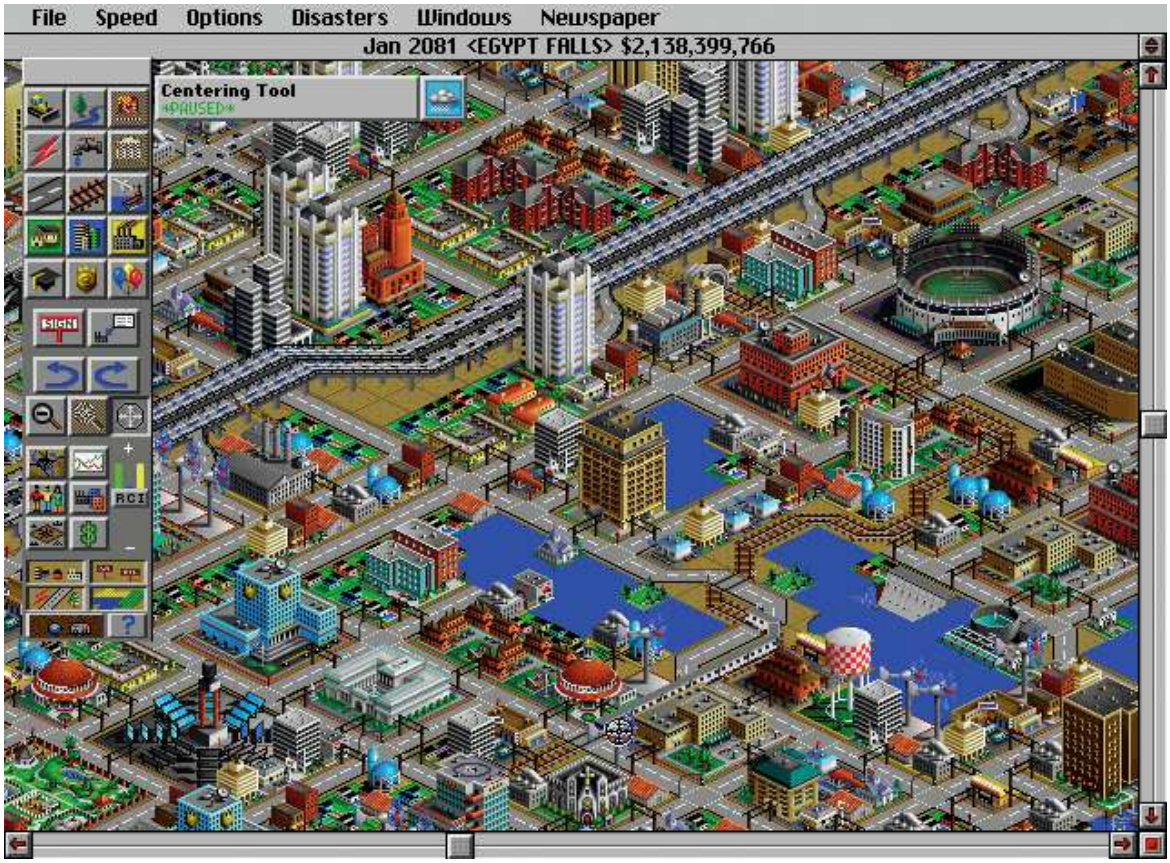
And when I wasn't just staring at my city, there was so much to fiddle with. Taxes to increase when I ran into money troubles, underground views for laying down utility pipes and subway lines, and graphs showing various attributes of my city that... well, I probably never really understood all the graphs. But at least they were there if I wanted to look at them.

And there was just something so mesmerising about peering down at the little world I was building, seeing the cars on the roads I built obeying the little traffic lights, experimenting with city ordinances, watching the city slowly grow until it was so incredibly big I'd just about run out of room. And then I'd start a new one.

SMASH THE SYSTEM

It was also extremely rare at the time: a game that had a beginning but no real ending, with no genuine win-state, or even a way to let you know if you should give up and start over or keep working on the city you had before you. It was open-ended, and you could build and manage your city indefinitely. Once I even left my game running overnight while I slept, just to see if it could sustain itself. I'm pretty sure it was in bad shape the next morning.

There was also the satisfaction that comes along with building something beautiful – knocking it down so I



LEFT: I wouldn't have a water shortage if you people would drink seawater.

RIGHT: I hate to raise taxes for the 75th time in a row. But I'm gonna.

THERE WAS JUST SOMETHING SO MESMERISING ABOUT PEERING DOWN AT THE LITTLE WORLD I WAS BUILDING

SIM-OFFS SimCity 2000's *many spin-offs*

SIMCOPTER
Players could import *SimCity 2000* cities into the game and fly around in them – and it was the first time gibberish language Simlish was used.

STREETS OF SIMCITY
Similar to *SimCopter*, but for cars: you could drive around in your *SimCity 2000* cities. You could also, weirdly, have car-based deathmatches with friends.

SIMHEALTH
A game simulating then-President Bill Clinton's healthcare reform policies. Ironically, perhaps, it was DOA, because who wants to simulate that?

could try to rebuild it again. Disasters could occur, with anything from earthquakes to plane crashes to alien attacks, but I could launch them myself, too, if I wanted a little extra challenge or if my city was humming along so nicely I'd just gotten a bit bored. That's the danger of including a disaster menu at the top of the screen. It's impossible not to click on it once in a while. Boom. There's a flood or tornado or a nuclear accident. Hmm, maybe city-builder games do make me feel like some sort of god after all, and not a very nice one at that. ■

BROUGHT 2 LIFE

How LEFT 4 DEAD cured a toxic LAN environment.

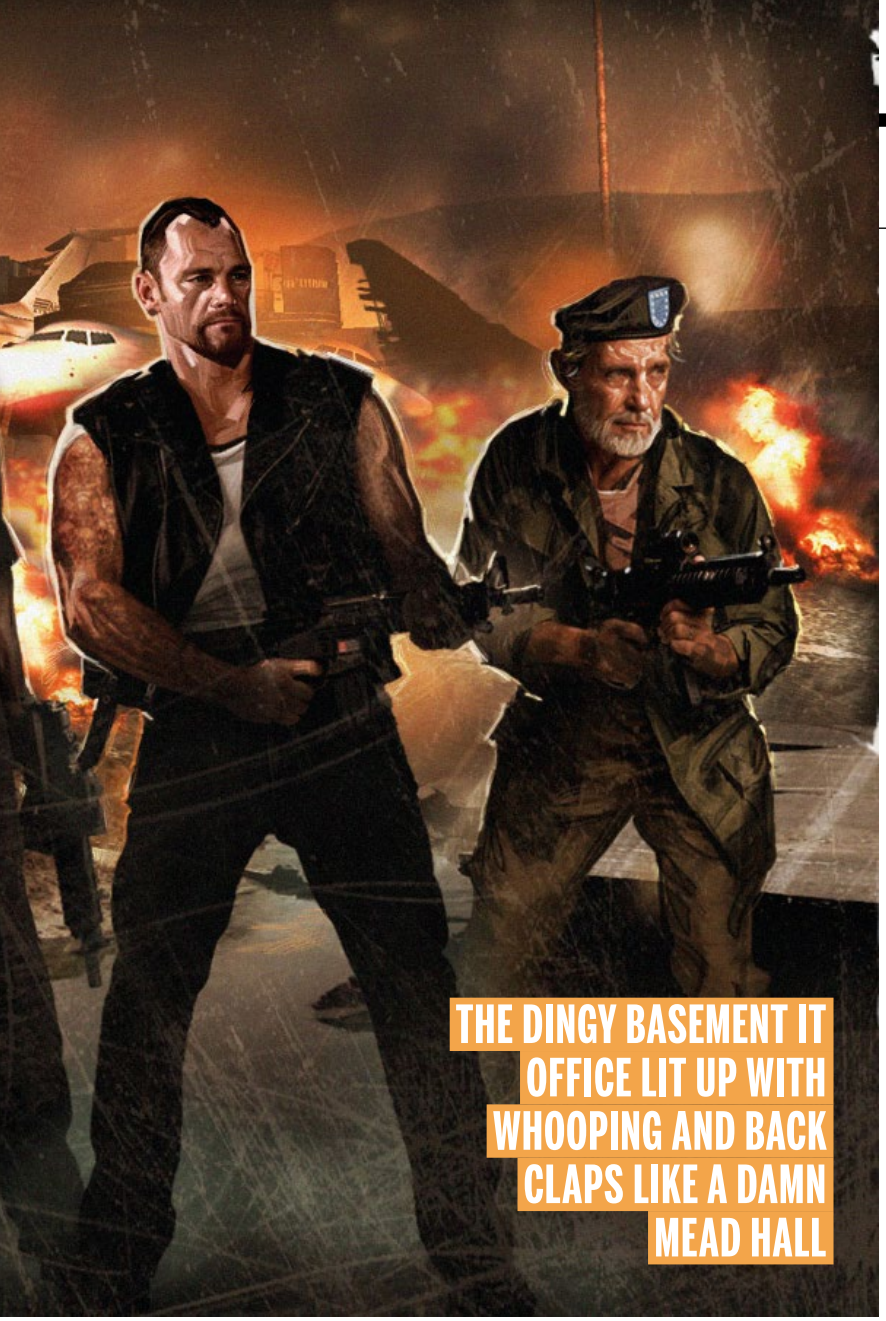
By James Davenport

L*eft 4 Dead* represented a turning point in how I socialise through games. In 2008, LAN parties were still around and I had a good group I'd play games with at my old IT gig at the University of Montana. We'd take over the office after-hours and run through a list of custom *Warcraft III* games (a lot of the original *DotA* before I realised what a mistake I was making), some *Quake* and *Unreal*, *Counter-Strike* and the like. The common thread: all competitive. Worse, so was everyone in the room. Things got heated, and after a lifetime of football and wrestling coaches teaching me how to boil blood, I shut down the moment someone took a game too seriously. I still do.

Left 4 Dead changed the mood completely. We went in on a few of those early four-packs and spread them around. No one was particularly excited about *Left 4 Dead*, but it was a Valve game so we had to give it a go. We didn't play anything else for the whole semester.

We started inviting more people to game nights because working together to survive a zombie apocalypse was a far more appealing activity than getting wiped by Mike in every game ever. Enough people of varying skill levels would show up to get a few groups going, each dancing with the AI director at their own lovely rhythm, bouncing between despair and hope. The screaming in the office shifted from anger to a chorus of yelping barely discernible as calls for help and ensuing thank-yous. Rather than end each session deflated, saying nothing and shambling off to our dorms, we'd stick around or walk somewhere together, maybe get food, breaking down a dramatic standoff at Dead Air's refuelling finale, or how

LEFT: All these zombies could use a hug and some words of affirmation.



THE DINGY BASEMENT IT OFFICE LIT UP WITH WHOOPING AND BACK CLAPS LIKE A DAMN MEAD HALL

BELOW: Not what you wanna see when you're on your lonesome.

BOTTOM: A collective 'ooooh' from the room with every pipe bomb.

LORE 4 READ

Some of the best comics based on Valve's excellent games

L4D
The Sacrifice, a story that ties *L4D* and its sequel together.
l4d.com/comic

TEAM FORTRESS 2
Read the catch-up then check out Ring of Fired.
teamfortress.com/comics.php

PORTAL
Lab Rat tells the story of a man living in the walls of Aperture Science.
thinkwithportals.com/comic

everything nearly went to shit in Blood Harvest's cornfield sprint.

After mastering the campaigns, we entertained the idea of trying out the versus mode and, yeah, that had me worried. See above. Yelling. Fragility. I tensed up at the thought, but *Left 4 Dead*'s versus mode never dipped back into that volatile competitive mood. Coordinating the perfect Smoker pull and Hunter pin combo to split up the survivors always carried more of a pranking-your-pals energy than any spectre-of-my-disappointed-dad vibes. Versus was cunning and playful, hewing closer to hide-and-seek than the pure reflex-driven play of most competitive shooters. We stayed jubilant and friendly. The dingy basement IT office lit up with whooping and back claps like a damn mead hall. God I miss it.

LAN 4 DEAD

It's odd, seeing the LAN culture fade so quickly after one of the best LAN games I'd ever played was released. Forces beyond our little IT office's control, I suppose. But it's OK. Sometimes we'll manage to get a fragment of the group together for some modded nightmare run of a custom *L4D2* level, Teletubby hordes chasing us through Mario's palace or something else normal like that. And with *Back 4 Blood* on the horizon, old text threads are creaking back into motion. I wonder if we'd be so adamant about keeping in touch if we kept playing *Quake* and *DotA*, pissing the bed with every bad game. Would I even lament the slow death of LAN, or would it be a relief to me?

Left 4 Dead made finding positive social connections in games a guiding principle for me, something I take into consideration with every multiplayer experience. Some genre fiction paved an avenue for amazing friendships. How great is that? And, yeah, we'll never be in the same room together again, but that's OK. A lobby's a lobby.

THE GREATEST INFLUENCER

PC gaming would look very different without CIVILIZATION. *By Fraser Brown*

I have no idea where we'd be without *Sid Meier's Civilization*. Its influence has been an overwhelming constant for decades, defining generations of strategy games and developers. If Sid Meier and Bruce Shelley hadn't decided to let Napoleon, Montezuma and Alexander the Great duke it out, swallowing up the world and dropping nukes on each other, a huge chunk of gaming history would never have happened.

Turn-based strategy existed long before *Civ*, but it's *Civ*'s brand of turn-based strategy that became the model that most of the genre ended up following. It's not just 4X games that owe almost everything to *Civ*. You can't help but stumble across its DNA everywhere, whether you're playing *Crusader Kings*, *Total War* or *Age of Empires*, which dreamed of being a real-time *Civ*.

It just kept setting the standard, over and over, with each new release. Wherever you are in the gaming timeline, there's a good *Civ* to play. Throughout almost my entire life, *Civ*'s been there, beckoning me to take one more turn. And it's always recognisable. You always know what you're getting with *Civ*. That doesn't mean it's immune to changes, and each team has left their own mark on the series, but it always maintains that comforting familiarity.

Meier's name is still in the title and he continues to oversee the series to this day, which is why it can be hard to separate the individual games from *Civ*'s long history. But it's not just Meier's legacy. Every single *Civ* has its own designer, and the team has changed over the years. Huge shifts have occurred due to their vision. And then each new designer builds on it, so that they're adding to this collaboration that's been going on for longer than a lot of its players have been alive.

TIME PORTAL

When you're playing *Civ VI*, you're also playing every *Civ* that came before it, and through all the changes that original design philosophy is still apparent. A focus on exploration and discovery has been with the series from the start, highlighting the achievements of humanity and not just the conflicts, and letting you win the game not just through conquest but by leaving Earth and travelling to the stars. It's ultimately an optimistic series, and that optimism proved to be infectious. Even *Total War*, a series all about huge armies colliding, lets you go down the diplomatic route, conquering the world by making massive alliances.

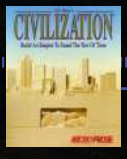
Civ might seem conservative 30 years on, but in 1991 it seemed wildly ambitious. Meier and Shelley's previous game was *Railroad Tycoon*, and the leap from managing a railroad company to being the immortal ruler of a global empire was pretty big. "We were young, and we had no fear," Meier told me in an interview a few years ago. It was an experiment. Things like using squares instead of hexes and making it turn-based instead of real-time weren't made right away, instead being born out of a desire to make this complex game more accessible.

Would I recommend the first game now? Maybe if you want a trip back through gaming's past. But you could instead play the much flashier *Civ VI*. Or, if you prefer squares over hexes, you can't go wrong with some *Civ IV*. And you'll still see what Meier, Shelley and Microprose were trying to create in 1991. Other developers are still trying to find their own *Civs*, like Mohawk Games' *Old World* and Amplitude's *Humankind*. At this point, the only way *Civ* will vanish is if actual human civilisation perishes. ■

BELOW: Maps were a bit simpler back in 1991.

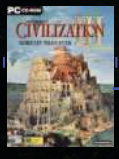
BOTTOM: Your majesty, please don't nuke us.

A BRIEF HISTORY OF CIVILIZATION *30 years of wonders and wars*

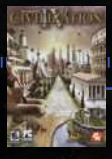


CIVILIZATION
1991
The one that started it all.

CIVILIZATION II
1996
The one with the animated emissaries.

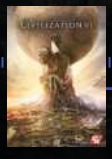


CIVILIZATION III
2001
The cultured one.



CIVILIZATION IV
2005
Civilization: The Next Generation.

CIVILIZATION V
2010
The rebel that introduced hexes.



CIVILIZATION VI
2016
The one that made cities huge.

WHEN YOU'RE PLAYING CIV VI, YOU'RE ALSO PLAYING EVERY CIV THAT CAME BEFORE IT

ACTIONS
At Rest
Fall
Crawl *
Fly
Run *
Get Up
Run Scared *
Greet
Sneak *
Grow
Walk Backwards *
Grow Fast
Walk Fast *
Jump
Walk Slowly *
Karate Kick
Dance
Kneel
Faint
Laugh
SET STARTING POSE
1 / 2
OK

SCENES
SOUNDS
WORDS
MORE TOOLS
FRAME
SCENE
UNDO
A New Movie
EXIT

HOLLYWOOD DREAMS

Pretending to be Pixar in **3D MOVIE MAKER**, Microsoft's weird 1995 animation studio for kids. ***By Tyler Wilde***

Today's PC gamers are constantly feeding YouTube and Twitch with game footage, but back in 1995, capturing our screens was hardly thought of. Though even then there existed seeds of 2000s machinima. One such seed was 3D Movie Maker, a program that empowered kids to spend afternoons animating car crashes and alien abductions. It's one of Microsoft's best bits of '90s software, recognising the potential for real-time 3D rendering as a creative tool. It's also bizarre.

There was an idea back in the '90s that modern software should map its functions onto the most obvious metaphors possible. In Microsoft Bob, for instance, programs were organised into the rooms of a house. PC Gamer's '90s demo discs similarly featured adventure game-style interfaces. These virtual spaces couldn't have boring old tutorials – Turing and Asimov promised artificial intelligence, not tooltips – so they were augmented with chatty characters such as a cartoon dog, our own Coconut Monkey and the infamous Clippy from Microsoft Office. 3D Movie Maker had a guide, too, but since it was for kids and this was the '90s, he was a horrible blue guy with goat pupils that ran perpendicular to each other. He was a real nightmare, McZee.

McZee's antics – riding a shopping cart down roller coaster tracks, turning into a slice of cheesecake – illustrate why the '90s holds such a monopoly on the words 'wacky' and 'zany'. He guided users around a movie studio, finally leading to the interface where you could make your own movies with props and characters as garish as he was. The models were clearly influenced by American cartoons of the time, such as Rugrats and Rocko's Modern Life, and that was good enough for ten-year-old me. (A Nickelodeon-themed version of the software released in 1996.)

MOVIE MAGIC

If I knew nothing of 3D Movie Maker and you asked me to imagine what a 3D animation program for kids might have been like in 1995, I'd probably assume that it was a proto-*Garry's Mod* disaster with impossible controls. On the contrary, this was a brilliant piece of software. It simplified 3D animation such that kids could create surprisingly sophisticated scenes and even their own audio if they had a microphone.

To animate a character walking, you would add the character to the scene, select the walking action, and then click and drag them along the floor to record a path. You could then scrub back to the start of the scene and do the same to another character or prop, layering the movie with animations. It was in 3D Movie Maker that I first got a sense of what a digital animation and video editing timeline was, which I'd carry into the embarrassingly bad games I made with Adobe Flash, the software used for so much vector animation in the late '90s and 2000s.

Once you made a video in 3D Movie Maker, there wasn't much to do with it other than show your family and friends. It was a toy, more or less, but also a peek at the future. At the time, we were still crudely editing home movies with dual-deck VCRs (MiniDV was a new format), but it was becoming clear that personal computers were one day going to put amateur creators – filmmakers, animators, musicians, game designers – on the same playing field as professionals. 3D Movie Maker wasn't a game itself, per se, but it was a vision of entertainment software as a creative tool, as opposed to a one-way fun pipe, and that is very PC gaming. ■

ONCE YOU MADE A VIDEO IN 3D MOVIE MAKER, THERE WASN'T MUCH TO DO WITH IT OTHER THAN SHOW YOUR FAMILY AND FRIENDS

BREAKOUT ROLES

***3D Movie Maker* featured some big debuts**

G-MAN
McZee's voice actor, Michael Shapiro, went on to play Gordon Freeman's employer in *Half-Life*.

COMIC SANS
Comic Sans debuted in 3D Movie Maker. It was actually designed for Microsoft Bob, but wasn't ready in time.

BONGO
Bongo is 3D Movie Maker's most recognisable actor, having appeared in the demo version.

CROWN JEWEL

CONQUESTS OF CAMELOT proved Sierra adventure games could grow beyond goofy parody. ***By Wes Fenlon***

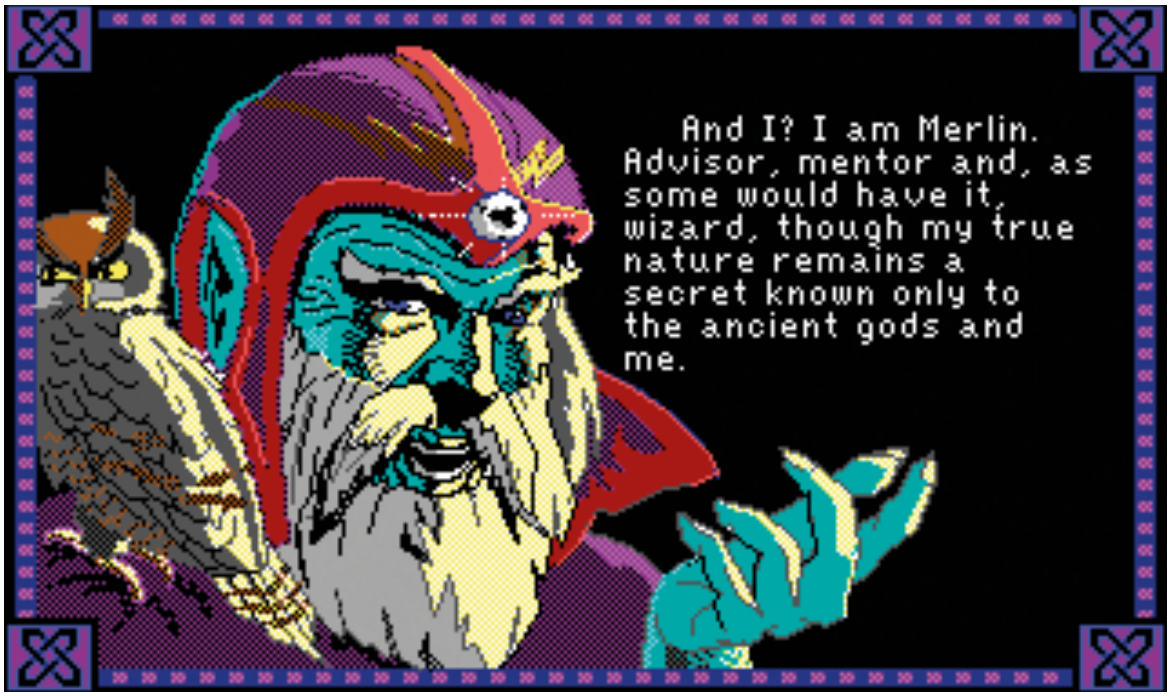
***Conquests of Camelot* introduced me to the merciless difficulty of old Sierra point-and-click adventures just a few minutes in. As King Arthur, I filled my purse with coin in preparation for a long journey to find the Holy Grail, picked up a magical lodestone from Merlin to guide me, and gave Guinevere a kiss before heading out the gates of Camelot – or trying to. The castle gate fell onto my head as I rode under it, crushing me to death.**

"It is terribly unwise to start a sacred mission without the blessings of the gods," *Conquests of Camelot* admonished. Later I'd be gored by a wild boar, skewered on the lance of the Black Knight, and fall through thin ice, freezing to death. As in most of Sierra's adventure games, surviving to see the end of *Conquests of Camelot* was a real challenge. Its puzzles were beyond my ten-year-old brain, but I didn't care – getting to *be* King Arthur made *Conquests of Camelot* as mystical an object to me as the Grail itself.

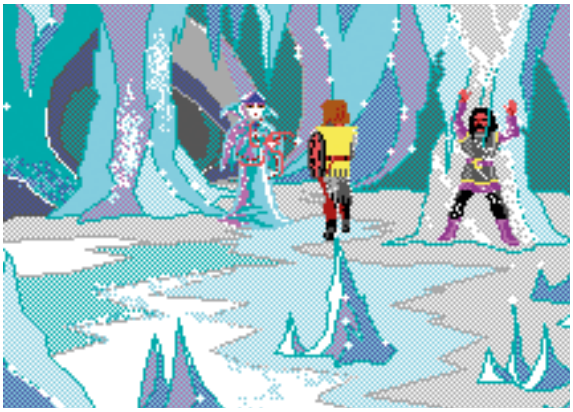
A BUSY LIFE IN CAMELOT

By the late '80s Sierra had expanded beyond *King's Quest* and *Space Quest* to other adventure series like *Leisure Suit Larry* and *Police Quest*, but this game felt like a step towards maturity. Sierra hired Christy Marx, head writer of the cartoon Jem and the Holograms, who had no experience designing games but a long list of cartoons and comics behind her. Undaunted by that inexperience, Marx threw herself into research and wrote a game that even today feels unusually rich and devoted to its source material.

As a kid this seemed like the definitive Arthur story to me, an


And I? I am Merlin. Advisor, mentor and, as some would have it, wizard, though my true nature remains a secret known only to the ancient gods and me.

LEFT: Is this the most badass Merlin has ever looked?



TOP: Wonder how Lancelot got into this predicament...

CONQUESTS OF THE LONGBOW

A year after *Camelot*, Christy Marx wrote and directed a follow-up adventure about Robin Hood and his merry men. *Longbow* was widely praised as an even better game. It smoothed over some of *Camelot*'s flaws, like its action scenes, trading them for less-clunky archery. Most notable, though, was the new art direction. *Camelot* was criticised in 1990 for looking dated compared to other contemporary adventures. *Longbow*, released just a year later in 1991, is both more detailed and more expressionist. Other than the low resolution, the art still looks great today.

adventure to get lost in once I'd worn out my tape of Disney's The Sword in the Stone. I didn't read The Once and Future King until years later, so *Conquests of Camelot* was my main introduction to knights Gawain and Lancelot and the legend of the Grail. Marx's writing has a classical flavour to it, more approachable than TH White's novel but still steeped in a bit of Ye Olde English. It's not tedious like *Police Quest* or as silly as most of Sierra's other adventures but still has a wry streak, like the text parser asking "Your bidding, M'Lord".

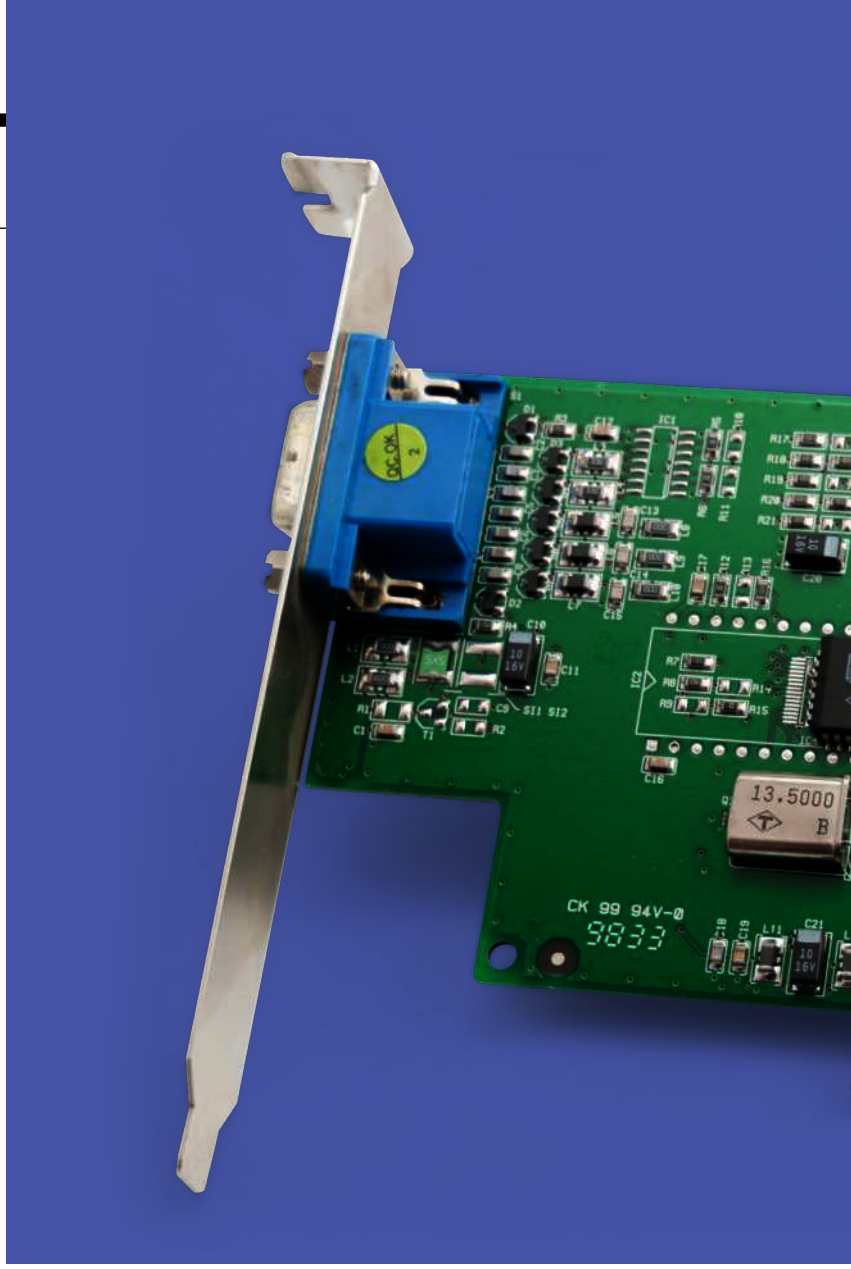
Conquests of Camelot ambitiously tried to capture everything that would go into a classic Arthurian quest, including a jousting contest, a sword fight against a mighty Saracen, and magic riddles. The action scenes were as clunky and frustrating as you'd expect from an adventure game in 1990, but I didn't know any better at the time – and neither did Sierra, really, which had only released one game in the *Quest for Glory* series at that point.

Thirty years later *Conquests of Camelot* may look rudimentary, and it sadly never got a VGA upgrade like many of Sierra's other early adventures. But it was one of my most formative PC gaming experiences, and not just because it taught me to save constantly. My dad and I played it together, and for me it ignited a passion for games with storytelling and puzzles before I understood adventure games were a defined genre. Years later, when he upgraded the family PC to a Pentium, I got an IBM 486 of my very own and spent hours playing LucasArts adventures like *Sam & Max* and *Indiana Jones & the Fate of Atlantis*.

Camelot also taught me that people went onto the internet and wrote FAQs with the answers to puzzles I could never solve myself. I printed out a guide and followed it to lead Arthur through Jerusalem and, at long last, claim the Holy Grail. The lesson about prayer didn't stick, though. I'm still a heathen – I just know not to trust castle gates. ■

PIXEL PUSHERS PAST

The graphics cards that helped define PC gaming. *By Jacob Ridley*



It's easy to forget about where we came from in PC gaming, especially when we're arguing over gigabytes of memory and teraflops of performance. But there's actually a lot that we can glean from the annals of GPU history – the colossal leaps in power that GPUs have taken in under 25 years goes some way to explaining why today's top graphics card costs $1,499.

You have to walk before you can run, and there were many attempts to nail an image resolution of just 800x600 before anyone could dream up the pixel count required for the latest games at 4K. Yet you'd also be surprised by just how many features so prevalent in modern GPUs were first introduced back at the dawn of the industry. But let's start right at the beginning – when active cooling was optional and there were chips aplenty.

3dfx Voodoo

1 It's March, 1996 – England is knocked out of the Cricket World Cup by Sri Lanka, a young boy celebrates his fourth birthday (that's me), and 3dfx releases the first of what would be a couple of game-changing graphics cards: the Voodoo. It's a graphics card looked back on fondly by many in the PC Gamer office. Clocked at just 50MHz and fitted with a whopping 4/6MB of total RAM, the Voodoo was clearly the superior card for 3D acceleration at the time. The top spec could handle an 800x600 resolution, but the lower spec was capable of only 640x480. Despite its 2D limitations, it would prove a highly successful venture, and set 3dfx on a trajectory into PC gaming fame.

Note: the 3dfx Voodoo is often referred to as the Voodoo1, although that name only caught on after the release of the Voodoo2.

INFO YEAR: 1996 / **CLOCK SPEED:** 50MHZ / **MEMORY:** 4/6MB / **PROCESS NODE:** 500NM

Nvidia Riva 128

2 A chipset company by the name of Nvidia would soon offer competition to the 3dfx in the form of the Nvidia Riva 128, or NV3. The name stood for 'Real-time Interactive Video and Animation', and it integrated both 2D and 3D acceleration into a single chip. It was a surprisingly decent card following the Nvidia NV1, which had tried (and failed) to introduce quadratic texture mapping.

This 3D accelerator doubled the initial spec of the Voodoo1 at 100MHz core/memory clock, and came with a half-decent 4MB SGRAM. It was the first to really gain traction in the market for Nvidia, and if you take a look at its various layouts – memory surrounding a single central chip – you can almost make out the beginnings of a long line of GeForce cards, all of which follow suit.

But while it offered competition to 3dfx's Voodoo1, and higher resolutions, it wasn't free of its own bugbears – and neither would it be alone in the market for long before a 3dfx issued a response in the Voodoo2.

INFO YEAR: 1997 / **CLOCK SPEED:** 100MHZ / **MEMORY:** 4MB / **PROCESS NODE:** SGS 350NM

3dfx Voodoo2

3 Now this is a 3D accelerator that requires no introduction. Known far and wide for its superb performance at the time, the Voodoo2 is famed for its lasting impact on the GPU market, great framerates, and continued use of a multi-chip design. A smorgasbord of chips, the Voodoo2 featured a 90MHz core/memory clock, 8/12MB of RAM, and – once connected via a port on twinned cards – the Voodoo2 could even support resolutions up to 1024x768.

Dual-wielding cards played a big role in the past decade of GPU performance. It was possible for a PC user to connect two cards together for better performance back in 1998 – and it was worth doing, too. 3dfx managed to stay on top with the Voodoo2 for some time, but it wasn't long until it would make a few poor decisions and be out of the graphics game entirely.

INFO YEAR: 1998 / **CORE CLOCK SPEED:** 90MHZ / **MEMORY:** 8/12MB / **PROCESS NODE:** 350NM

Image credits (1,2 & 3): Fritzchens Fritz

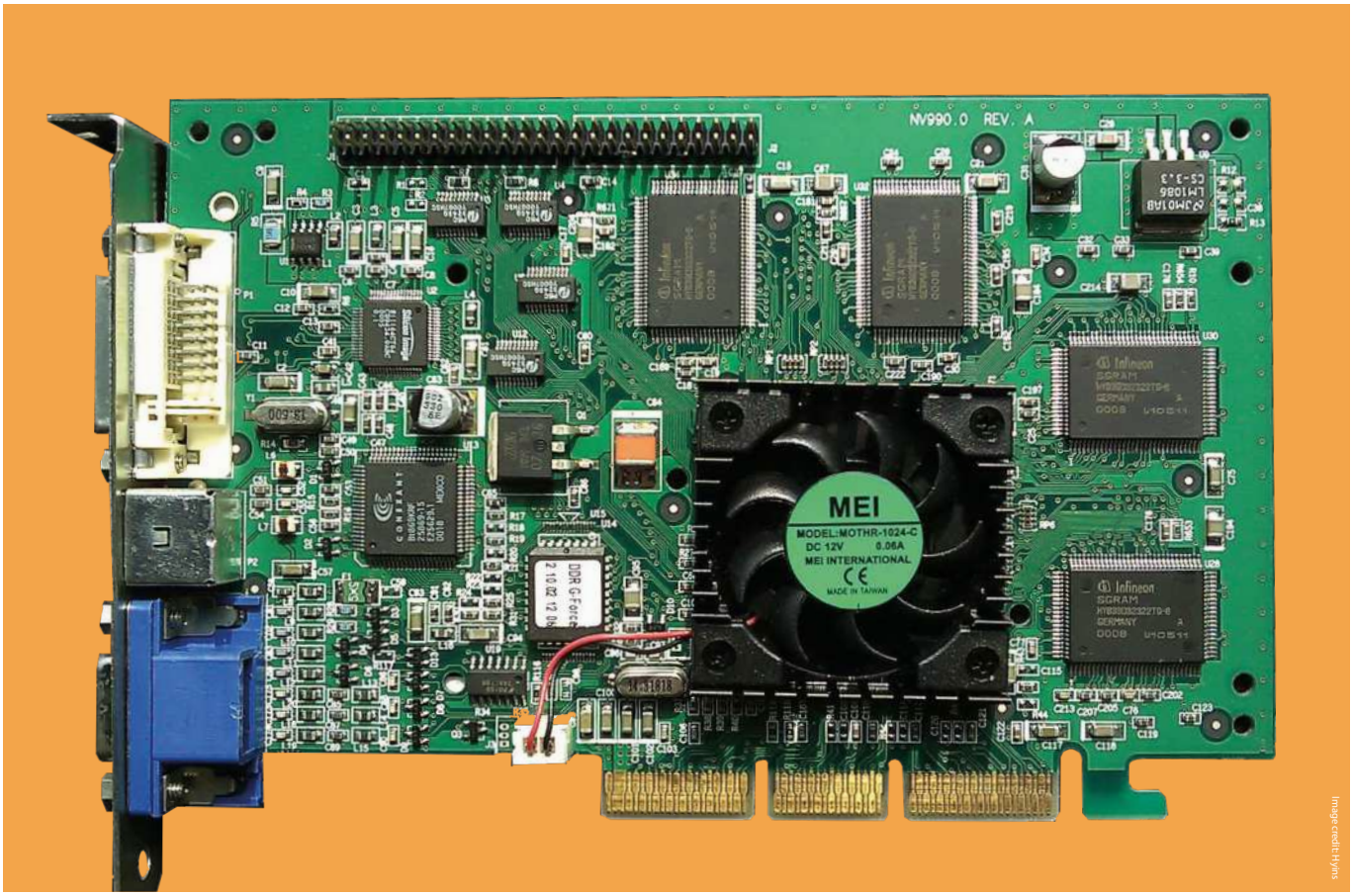


Image credit: Hyvns

Nvidia GeForce 256

4 The first bearing the GeForce name still in use today, the GeForce 256 was also the 'world's first GPU'. "But what about the Voodoos and the Rivas?" I hear you ask. Clever marketing on Nvidia's part has the GeForce 256 stuck firmly in everyone's minds as the progenitor of modern graphics cards, but it was really just the name Nvidia gave its single-chip solution: a graphics processing unit, or GPU.

As you can probably tell, this sort of grandiose name, a near-parallel to the central processing unit (CPU) raking in cash since the '70s, was welcomed across the industry.

That's not to say the GeForce 256 wasn't a worthy namesake, either. Integrating acceleration for transform and lighting into the newly-minted GPU, alongside a 120MHz clock speed and 32MB of DDR memory (for the high-end variant). It also supported Direct3D 7, which would allow it to enjoy a long lifetime powering some of the best classic PC games released at that time.

INFO **YEAR:** 1999 / **CORE CLOCK SPEED:** 120MHZ / **MEMORY:** 32MB DDR / **PROCESS NODE:** TSMC 220NM

Nvidia GeForce 8800 GTX

5 Once Nvidia rolled out the GeForce 8800 GTX, there was no looking back. Precursor to ultra-high-end, enthusiast graphics cards, such as the RTX 3090, if you want to talk about a card that really got peoples' attention it's the GeForce 8800 GTX. Launched back in 2006 to much fanfare, the 8800 GTX was the largest GPU ever built at the time. With 128 Tesla cores inside the G80 GPU, and 768MB of GDDR3 memory, the 8800 isn't an unfamiliar sight for a modern GPU shopper. It bears the marks of many a modern GPU – even if it might be a little underpowered by today's standards. Despite a pre-launch recall threatening to scupper the 8800 GTX launch plans, this graphics card ruled over the GPU market at launch and even stuck around for some time afterwards thanks to a unified shader model, which was introduced with the architecture alongside Direct3D 10.

INFO **YEAR:** 2006 / **CORE CLOCK SPEED:** 575MHZ / **MEMORY:** 768MB GDDR3 / **TRANSISTORS:** 681 MILLION / **PROCESS NODE:** TSMC 90NM

ATI Radeon HD 5970

6 And what's AMD been doing all this time? Semiconductor company ATI was busy building heaps of console chips right the way through the '90s and early '00s, and made some excellent GPUs in its own right, such as the X1900 XTX. It was later purchased by AMD in 2006. After the abortive HD 2000 and 3000 series, the HD 4870 and 4850 were quality cards, but the one that made the biggest splash after the move was the Radeon HD 5970. The HD 5970 was essentially a large Cypress GPU, 1,024MB pool of memory, and a sizeable 256-bit memory bus… multiplied by two.

This twin-GPU tradition continued right the way up to the AMD Radeon R9 295X2 and the Nvidia Titan Z. But once multi-GPU support started dwindling, solo cards became the predominant form factor. And with multi-GPU support in the developer's court due to the introduction of DirectX 12, they may never return.

SPECS **YEAR:** 2009 / **CORE CLOCK SPEED:** 725MHZ / **MEMORY:** 2,048MB GDDR5 / **TRANSISTORS:** 4,308 MILLION / **PROCESS NODE:** 40NM

THE ONE THAT MADE THE BIGGEST SPLASH AFTER THE MOVE WAS THE RADEON HD 5970

Dave's fave from the grave

NVIDIA 8800 GT

Dave James: I've gamed on more graphics cards than I can remember. My first Voodoo2 was transformative, the Riva TNT was ace, and I've since had twin Titans and dual-GPU Radeon cards in my home rigs, but none hold so dear a place in my heart as the 8800 GT. Forget the 8800 GTX, the GT combined stellar performance, great looks, and incredible value. I've still got my single-slot, jet-black reference card – the very same one photographed here and originally for PC Format issue 217 – and will never part with it.

MAKE YOUR OLD GAMES NEW AGAIN

Classic games and the mods that give them a serious spruce-up.

By Tom Hatfield

One of the great pleasures of PC gaming is that games can grow old gracefully. If you dig your old console out of the attic and dust it off, you'll find your games for it run exactly as well as they did back in the 1990s. If you load up an old PC game from that period, however, it's a different story.

You might have to jump through a few hoops to get it running, but once you do it'll take advantage of your new hardware and run better than ever. And that's *before* you get into modding.

In the world of PC gaming, old games can actually get better as they age, as fans work on them, for free, for years. So why not dig out your old CDs, or pay a visit to Steam or GOG, and try those classics again? And if you missed something great the first time around, why not correct that oversight now?

This list is designed to help you. I've brought together a couple of dozen mods that will improve and expand your experience of classic PC games. Some of them help the game look prettier, some fix bugs the developer never got around to, and others restore cut content that never made it into the game in the first place. The only thing you won't find in this list are mods that make the game into something else. Those are great, but they aren't going to help you enjoy the original, and they're not what we're here for today.

DEUS EX

How much introduction do I need to give *Deus Ex*? For years it has staked out a high position in PC Gamer's greatest games of all time. It was the game of go anywhere (probably through a vent) and do anything (probably crawl through a vent). *Deus Ex* was all about options, letting you figure out how you wanted to approach any of its enormous levels. But even at the time it was a dated-looking game, using the *Unreal 1* engine in the era of *Quake III*. There are fixes for that.

MOD

DEUS EX REVISION

For years there have been multiple competing mods to revitalise the original *Deus Ex*. *Revision* grabs the best from each of those, while offering a mass of tweaks and adjustments of its own. Visual improvements from *New Vision* and *Project HDTP* are included, while aug-adjusting mods like *Shifter* and *Biomod* appear as game modes. Upon release it was even endorsed by Eidos Montreal, creators of *Human Revolution* and *Mankind Divided*.

www.dx-revision.com

FALLOUT 2

Fallout 2 was several times larger than the original, despite a short development cycle, and yet still there was content left on the cutting room floor. It's the wackier and less coherent of the two original _Fallout_s, but still a great game. Seedy New Reno in particular puts _Fallout: New Vegas_'s strip to shame.

MOD

KILLAP'S FALLOUT 2 RESTORATION PROJECT

Killap has created both an unofficial patch (bundled here, although you can download it separately) and this mod, which restores a vast amount of cut content. Whole new locations have been restored, including a Chinese submarine that crashed into San Francisco. There are also half a dozen new characters, including Ian from the first *Fallout*, and Kaga, the previous Chosen One of your tribe.

www.killap.net

BALDUR'S GATE 2

It's easy to forget now, but the RPG was considered verging on dead when _Baldur's Gate_ hit the scene. The slow decline of the _Ultima_ series followed by the release of _Diablo_ seemed to indicate that action RPGs were the future. BioWare's surprise hit was a vehicle for excellent writing and memorable characters, and set the stage for years of hits that followed.

MOD 1

UNFINISHED BUSINESS

Most graphical enhancement and fix mods are redundant thanks to the 2014 *Enhanced Edition*. Thankfully *Unfinished Business*, which restores cut quests and other content, can run on either classic or enhanced versions. There are too many additions to name here, but the standout is definitely The Kidnapping of Boo: which finally gives fan favourite Minsc his own sidequest. There is also a version available for *BG1*.

www.pocketplane.net/ub

MOD 2

ASCENSION

Ascension is a curious thing, it's still an unofficial mod, but it was created by long time BioWare designer David Gaider, who was unhappy with how the original ending of the game turned out. The resulting mod adds much tougher and more spectacular boss fights to the *Throne of Bhaal* expansion, but also comes with a handful of new character moments and dialogue created by one of the game's original writers.

www.bit.ly/2dkoaok

FREESPACE 2

Considered by many to be the greatest space game ever made, *FreeSpace 2* was released in 1999 and sold very little. It was an incredibly unfair fate for a brilliant game. It never had the story of *Wing Commander* or the wide open world of *Elite*, but it put the player right in the middle of huge, epic space battles.

MOD

FREESPACE OPEN

The saving grace of *FreeSpace 2*'s failure is that no one minded when they released the source code. A small community picked it up and they've been polishing and enhancing it ever since. *Freespace Open* is what kept space games alive until the recent Kickstarter boom. The base installer upgrades the visuals in a host of ways, but

it's also a platform for tons of player-made campaigns and the inevitable Star Wars/Trek mods.

www.fsoinstaller.com

SUPREME COMMANDER

Famous for its limitless zoom and massive scale, *Supreme Commander* was about two things: huge robots and efficiently managing your economy. It never quite won the mainstream appeal of other strategy games, but it gained a cult following, and the thrill of finally building a giant super unit will never be matched.

MOD

SORIAN AI

After installation you'll find six new types of AI to choose from when setting up matches, representing different strategies the AI can emphasise. Sorian AIs are generally more difficult opponents than vanilla versions, as they're smarter and more likely to use high-tech units rather than just swarm you with low level ones.

This mod was so popular that Sorian was eventually hired by Gas Powered Games.

www.bit.ly/2eBcKxs

VAMPIRE: THE MASQUERADE – BLOODLINES

Vampire is famously both one of the best written and most original RPGs of all time, and one of the buggiest games ever released. In its original state it was near unplayable, yet the characters and setting shine, painting a wonderful world of tortured goths. I highly recommend playing it twice, saving the delusional Malkavian playthrough for your second attempt, as the exclusive dialogue is full of hints and meta-jokes about the main narrative. But patch it first.

MOD 1

COMMUNITY PATCH

When I say *Vampire* was buggy, I'm not playing around. An official patch addressed some issues, but when developer Troika closed its doors the fans took up the task of fixing the game. Years later, they're still going. Not all of *Vampire*'s problems can even be fixed: bad design decisions, like the woeful shooting, remain. Yet with the community patch in place the game becomes playable, and the writing can shine.

www.bit.ly/2dom9Te

MOD 2

BLOODLINES ANTITRIBU

If you're looking for something more than bug fixes, this is the mod you want. *Antitribu* adds seven new vampire clans, over a 100 new NPCs and the ability to join the Sabbat, who were hostile in the main game. Essentially, it's a fan-made expansion pack.

www.bit.ly/2eMunKn

KNIGHTS OF THE OLD REPUBLIC 2

KOTOR's less famous offspring was famously unfinished on release. Rushed out in a single year, the game was both buggy and incomplete, the ending in particular playing like the publisher ripped it out of the developer's hands while they were halfway through writing the thing. And yet it has become a cult classic, partly because of its subtle 'shades of grey' narrative that remains one of the most fascinating Star Wars stories in any medium.

MOD

THE SITH LORDS RESTORED CONTENT MOD

This is the gold standard in cut content restoration mods. It replaces and revamps the unfinished finale, while also salvaging hundreds of other little interactions and characters. Most famously it restores a planned factory for HK assassin droids, putting a smile on the faces of killer robot fans everywhere.

www.bit.ly/2edIurf

DOOM

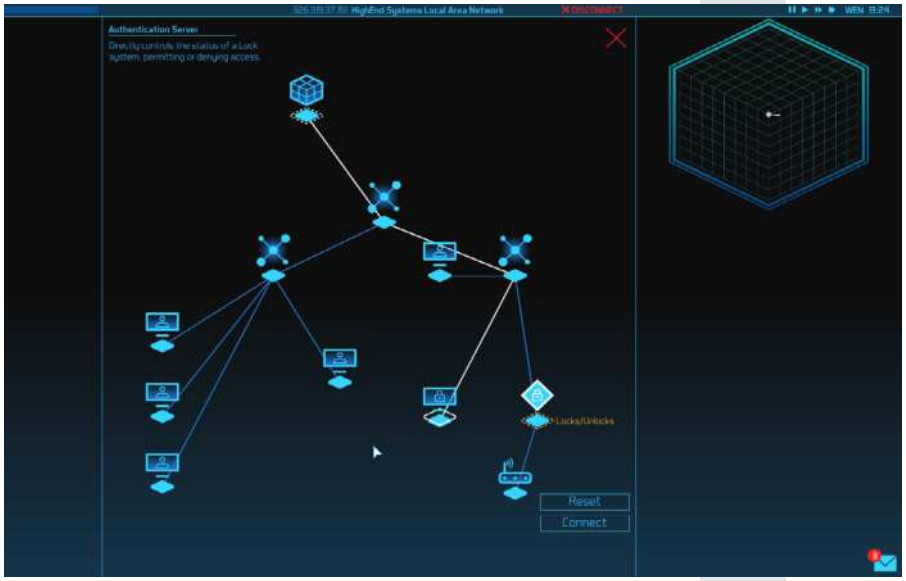
Hey, it's *Doom*. Do I have to explain it? It's the game that popularised the first-person shooter as we know it, and launched one of the longest running mod scenes in PC gaming. There are countless *Doom* mods in existence, from faithful adaptations of the original game to new levels, art projects and entire new games built within the engine.

MOD

BRUTAL DOOM

Here are new death animations, enemy dismemberment, kicking, punching, souped-up weapons and more. Yet this is no grab-bag. Once you start playing you realise each change has been carefully chosen to fit the tone of the original game. Back in 1993 *Doom* seemed shocking, transgressive and brutal. Nowadays it simply doesn't have the same impact. The ridiculous gibs and loud shotguns of *Brutal Doom* bring that feeling back. It may not be the same *Doom* you played in 1993, but it captures the feeling of playing *Doom* in 1993 all over again.

www.bit.ly/1mmsv60



UPLINK

Uplink is the best hacking game you will ever play. In fact, it's so good you'll probably never look at a terrible tacked-on hacking minigame the same way again. The game's success launched indie studio Introversion, which later produced *Darwinia, Defcon, Prison Architect* and *Scanner Sombre*.

MOD

UPLINK OS

This swaps the original '80s hacker movie aesthetic for something a little more silicon valley startup. The shiny, slick OS is more Apple than Omni-Consumer Products, yet still feels like it's offering a hacker fantasy, just a different kind. There are also a host of small tweaks and convenience upgrades, including female NPCs and an in-game notepad to help keep track.
www.moddb.com/mods/uplink-os

GTA IV

The fourth instalment of Rockstar's habitually headline grabbing crime sim moved towards a grittier, more realistic approach. Where games such as *Vice City* had gone for an '80s cartoon look, *GTA IV* painstakingly recreated New York in minute detail to tell the story of Serbian immigrant Niko Bellic. Liberty City was the most incredible location ever built for a game, at least until *GTA V* topped it in 2013.

MOD

ICENHANCER

The *GTA IV* mod scene is as impressive as that of many older and better supported games. Indeed the game was only three years old when the astonishing *ICEnhancer* burst onto the scene. With clever use of shaders and post-processing effects, it gave Liberty City a reboot that puts it almost on a par with *GTA V*'s Los Santos. If you prefer fake New York to fake LA, this is a must-have.
www.icelaglace.com

BATTLEFIELD 2

If you ask people what their favourite *Battlefield* is, you'll probably get one of three answers: *Bad Company 2*, *Battlefield 2142*, or *Battlefield 2*. *Battlefield 2* moved the series from WWII to the modern day and in doing so created the familiar high-tech, jet planes and assault rifles game we know today. Let's make it better.

MOD

PROJECT REALITY

This mod is partly about obsessively modelling ballistics and making the game super hard, but far more importantly it's about teamwork. The *Project Reality* community requires commitment, but if you're willing to buy in you'll find yourself working together as a team better than in any other shooter. The ongoing success of the mod led the developers to release their own game, *Squad*.

www.realitymod.com

SYSTEM SHOCK 2

Without this game, there would have been no *BioShock* and no *Deus Ex*, and without those who knows what PC gaming would look like today. *System Shock 2*'s mix of first-person shooting and RPG, set aboard a ruined starship where the crew has turned into monsters, may seem familiar now, but this is where it all started. It's a shame it looks so dated, but happily there's something you can do about that.

MOD 1

REBIRTH MOD

Rebirth is all about replacing *System Shock*'s painfully low-polygon models with more detailed versions. It's mostly focused on the NPCs, including replacements for the hybrid, midwife, monkeys, rumbler, ghosts and more. It won't make the game look like something out of the modern day, but it can at least manage to make it look more like 2002 than 1999.

www.bit.ly/2eoTTAM

MOD 2

SYSTEM SHOCK 2 TEXTURE UPGRADE

The other half of making *System Shock* look better is this upgrade, which focuses less on polygons and more on pixels. It's a simple injection of higher resolution textures, but given the tiny, blurry size of '90s bitmaps it makes a big difference. It also pairs neatly with *Rebirth* (yes, you can install both at once) to make the game look a little more up to scratch.

www.bit.ly/2eDAj7l

TOTAL WAR: SHOGUN 2

For the seventh *Total War*, Creative Assembly returned to Japan – the setting of the series' debut. *Shogun 2* excels by taking many of the series' best features and using them on a more intimate scale. It's beautiful too, using the setting to create battle spaces filled with interesting features that offer some satisfying tactical challenges.

MOD

DARTHMOD: SHOGUN 2

Although Darth is no longer part of the *Total War* modding community, his mods remain some of the best around. *DarthMod: Shogun II* is a huge overhaul that rebalances units, improves AI and diplomacy, and contains a large selection of submods that tweak the look, feel and challenge of the game. The

ultimate aim is to increase the sense of realism, which makes for a harder, more tactical campaign.

www.bit.ly/2eecvnt

MORROWIND

This has long been a cult favourite among Bethesda fans. The first *Elder Scrolls* game to become a breakout hit, it was many people's first experience of the go anywhere, do anything RPG. More than that, the *Morrowind* setting felt different. It felt weird. The public transport system relied on giant beetles, for heaven's sake.

MOD

MORROWIND OVERHAUL

If you want to revisit *Morrowind* now I recommend skipping the attempts to port it to the *Oblivion* and *Skyrim* engines (still in progress after many years) and simply upgrading *Morrowind* itself. There are hundreds of mods out there, but this one packages a whole bunch of carefully selected

mods into one easy download. The result isn't exactly *Skyrim* quality, but it's a huge visual improvement.

www.bit.ly/3puTL8R

HALF-LIFE

The second most important FPS of all time. *Half-Life* took *Doom*'s mazes and monsters approach and added a coherent story told entirely in first-person, no cutscenes. Again this seems normal now, but at the time it was revolutionary. Much like *Doom*, *Half-Life* acquired an incredible mod scene, which spawned, among other things, *Counter-Strike* and *Team Fortress*.

MOD

SVEN CO-OP

Sven Co-op has been around in some form for over two decades, from the earliest days of *Half-Life* modding, but now it's available as a free standalone on Steam. The premise is simple: what if you could play *Half-Life* (and *Opposing Force*, and *Blue Shift*) in co-op? Things only escalated from there, with a bunch of new weapons and other tweaks added to the *Sven* version of *Half-Life*'s campaign. Once you're done with *Half-Life* itself, there's way more content out there created by 20 years of modders who've used *Sven* as a platform for their own ideas.

www.bit.ly/1nyCHxo

STALKER: SHADOW OF CHERNOBYL

The very first issue of PC Gamer I ever bought contained the announcement of *Stalker*. That was in 2001. It took a further six years for the game to actually come out, at which point it was still buggy and unfinished. That was the unfortunate consequence of a small Ukrainian studio making such an enormously ambitious game. Despite all this, the game was still excellent, offering a uniquely bleak, post-Soviet, open-world setting and a grim survivalist fantasy.

MOD 1

STALKER COMPLETE

A lot of *Stalker* mods come in the form of enhanced difficulty, more survival elements and pitch black nights. *Complete* is different, concerned instead with keeping the core experience close to what the original developers intended. The main eye-catching element is the new graphics, but there's also a host of improved AI and bugfixes, necessary for such a famously broken game.

www.bit.ly/2e255q9

MOD 2

LOST ALPHA

This began as a project to restore zones that were cut from the final game, but once they were done, the modders had to invent some of their own content to fill the places up. At one point this was being considered for release as a paid expansion to *Stalker*, but sadly a leak put an end to those plans. The result is something very much like the original *Stalker*, and yet hauntingly, strangely different.

www.moddb.com/mods/lost-alpha

WARHAMMER 40,000: DAWN OF WAR

Dawn of War was the first videogame to truly understand 40K's excessive scale. Huge armies clashed, and clashed frequently, as Relic came up with the canny idea of tying resources directly to captured territory, denying us the option to fight a defensive war.

MOD 1

TYRANIDS MOD

The original game included almost every army available for the Warhammer 40,000 tabletop game. The main part of that 'almost' was Tyranids. Voracious Alien-like bug creatures who devour whole planets, the Tyranids were popular with many Warhammer tabletop players, who were sad they never got the chance to try them out on PC. Relic clearly agreed, as the developers made these one of the original factions in *Dawn of War 2*. But if you want them in the grand scale of the original *Dawn of War*, this is where to get them.

www.bit.ly/2e47NOr

MOD 2

ULTIMATE APOCALYPSE

More isn't always better in modding, but it is always better in Warhammer 40,000. The setting is based on excess, so it was inevitable that eventually modders would add Titans, Warhammer's biggest, mostly ridiculously expensive plastic monstrosities, into *Dawn of War*. Not only does *Apocalypse* give every faction from the original game its own giant unit (along with other scale-enhancing additions), but if you install the above mod, the Tyranids will get one too.

www.bit.ly/1ERgobl

DARK SOULS

Dark Souls isn't a particularly ancient game, so why is it here? Well, after it made huge waves when released on console in 2011, PC gamers clamoured for a port. A year later they got one. Just not a good one. FromSoftware wasn't a PC developer, and with no experience of porting, the studio released an awkward, low-res affair stuck with Games for Windows Live (finally patched out in favour of Steamworks in 2014). Could anything salvage the excellent game from the disappointing port? Yes.

MOD

DSFIX

Released almost immediately after *Dark Souls* hit PC, *DSFix*'s most basic function is to allow players to boost the game's resolution, but it also provides a host of other features, such as acting as a mod loader for new textures and keyboard re-mapping. I really don't recommend playing *Dark Souls* with a keyboard though. Not even a little bit.

www.bit.ly/19KF7Pz

THIEF: DEADLY SHADOWS

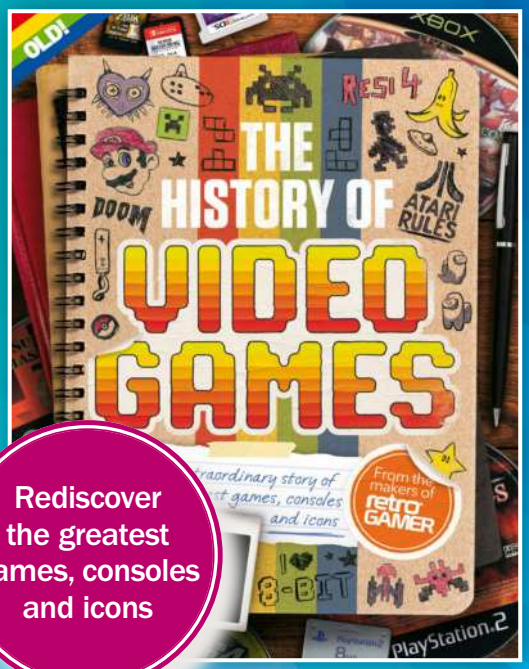
The last game produced by the legendary Ion Storm studios, *Thief: Deadly Shadows* offered the same kind of hub based, open-ended sneaking as *Deus Ex*, while still staying true to the series' larcenous roots. For older *Thief* games, consider trying the *Gold HD Texture Mod* for the original, and *Thief II HD Texture Mod* for *The Metal Age*.

MOD

SNEAKY UPGRADE

Sneaky packages together a quite frankly exhausting list of other mods for easy installation. The changes include but are not limited to: texture improvements, animation improvements, bug fixes, higher resolution support, controller support and old *Thief*-style briefing videos. My absolute favourite improvement is that the levels are no longer broken up by loading zones, but instead form one large and sprawling space, perfect for immersive sim enthusiasts.

www.bit.ly/2eB9ouG



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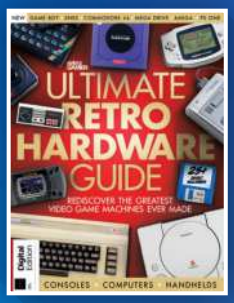

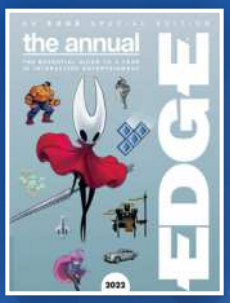

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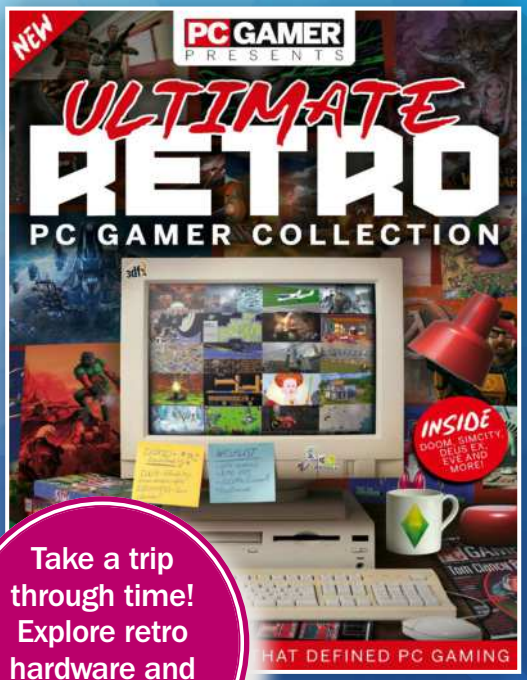

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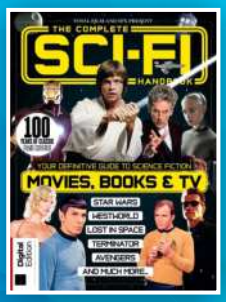

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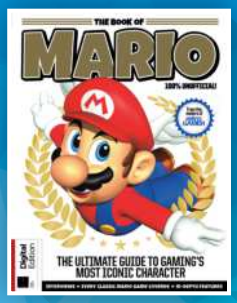

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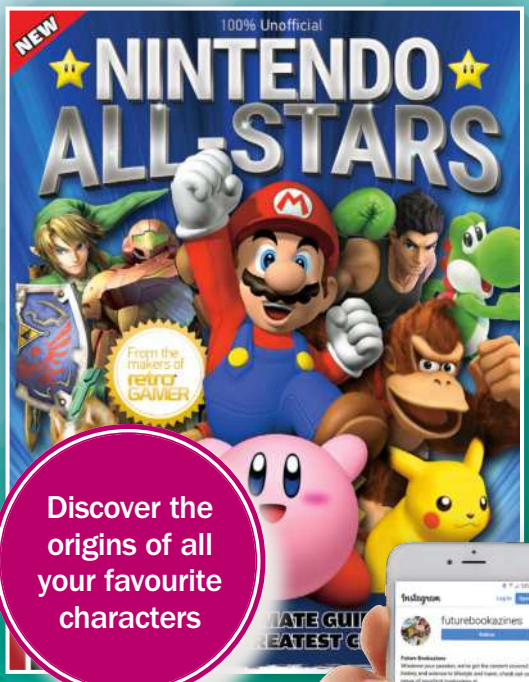

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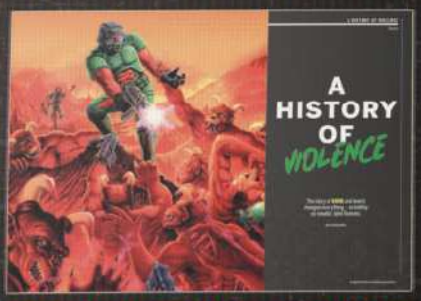

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